REPORT

UPON THE

STATE OF PUBLIC HEALTH

IN THE

CITY OF DUBLIN

FOR THE YEAR 1908,

BY SIR C. A. CAMERON.

DUBLIN

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Medical commonplace-book.

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DUBLIN

Report upon the state of public health and the sanitary work performed in Dublin during the year 1908

Dublin 1909.

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REPORT

UPON THE

STATE OF PUBLIC HEALTH

AND THE

SANITARY WORK PERFORMED IN DUBLIN DURING THE YEAR 1908;

ALSO

FORTY-SIXTH ANNUAL REPORT

UPON THE

ANALYSIS OF FOOD, DRUGS, WATER, &c.

BY

SIR CHARLES A. CAMERON, C.B., M.D., R.U.I.,

D.P.H. Camb.; M. and Hon. F.R.C.P.I.; F.R.C.S.; F.I.C.

Medical Superintendent and Executive Officer of Health, Public Analyst, and Inspector of Explosives.

Past-President, Honorary Diplomate in Public Health, and Professor of Hygiene and Chemistry, Royal College of Surgeons; L.A.H. (Honoris Causâ); Vice-President and Ex-President, Royal Institute of Public Health, and of Society of Public Analysts; Examiner in Sanitary Science, Royal University; Member of The Army Medical Advisory Committee; Ex-President of the Engineering and Scientific Association of Ireland; Vice-President Royal Dublin Society; Hon. Member of the Academy of Medicine of Sweden, the State Medical Society of California, of the Societies of Hygiene of France, Belgium, Paris, Bordeaux, &c.; the Royal Hibernian Academy, the Royal Institute of Architects of Ireland, the Institute of Civil Engineers of Ireland, the Institute of Sanitary Engineers, London, &c.



DUBLIN:

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1909.

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TABLE OF CONTENTS.

	Page
Public Health Committee	5
Sanitary Staff	5
Situation of Dublin	11
Population of Dublin	11
Density of Population	13
Ages of the Population	14
Number and Valuation of Houses	15
Number of Families and Nature of their Dwellings ...	16
Tenement Houses	18
Meteorological Statistics	19
Births	31
Deaths	33
Corrected Death-rate for Dublin, Belfast, and Cork ...	34
Deaths in the City of Dublin	35
Causes of Deaths in the City of Dublin	36
A Sanatorium for Consumptives	45
Cerebro-Spinal Fever	47
State of Public Health in the City of Dublin in 1908 ...	47
Outbreak of Typhoid Fever Caused by Infected Milk ...	49
Statistics of Deaths in the City of Dublin	87
Zymotic Death-rate	87
Deaths from Various Diseases	88
Causes of Deaths in Metropolitan Area	90
Deaths in Registrars' Districts	92
Death-rate at Different Ages	94
Social Position of Inhabitants	96
Social Position of Decedents	98
Birth and Death-rates in Irish Towns	100
The Vital Statistics of Seventy-six of the Largest English Towns during 1908	101
Death-rate of Children	104
Admissions to Hospital	109
Notification of Infectious Diseases	109

	Page
Sanitation in Schools	110
The Tenement Houses	110
The Drainage System and Sanitary Accommodation of Tenement Houses	122
Cellar Dwellings and Houses Condemned and Closed during 1908	125
Return of Work Under Factory Act, 1901, during the Year 1908	126
Shop Hours Closing Act	132
Dangerous Shell-Fish	133
Disinfecting Department	134
Work Done by Disinfecting Department	136
Corporation Baths and Wash-houses	137
New Buildings Erected in 1908	145
Return of Sanitary Operations for 1908	152
Examination of the Udders of Cows	156
Veterinary Department	156
Registration of Dairies, &c., ...	158
Inspection of Dairies and Cowsheds	159
Unsound Food Confiscated	161
Return of Cattle, &c., Condemned for the Year 1908 ...	162
Expenditure for 1907 and Estimates for 1908, Sanitary Account	163
Savings and Excess Expenditure	168
Annual Report of City Analyst	169
Food and Drugs Analysed	170
List of Persons Fined under Provisions of Sale of Food and Margarine Acts	188
Summaries for 1870-1907	195
Analyses of Vartry Water	196

ANNUAL REPORT.

PUBLIC HEALTH COMMITTEE OF THE CORPORATION OF DUBLIN (1908).

The Right Hon. Gerald O'Reilly, *Lord Mayor.*

Alderman Thomas Kelly, *Chairman.*

Councillor John Parkinson, *Deputy Chairman.*

Alderman James C. McWalter, M.D., B.L.

Councillor James Cummins, J.P.,
„ J. P. Nannetti, M.P., J.P.,
„ James Byrne,
„ Charles A. James, J.P.,
„ Patrick Comerford,
„ Charles J. Murray, LL.D.

Medical Superintendent Officer of Health, Executive Sanitary Officer, Inspector of Explosives and City Analyst:
Sir Charles A. Cameron, C.B., M.D., F.R.C.S.I.

Assistant Secretary and Executive Sanitary Officer:
Patrick Nally.

Veterinary Surgeon:
Andrew Watson, M.R.C.V.S.

Clerks:
Joseph P. Brodrick,
Thomas Healy,
M. DeCourcey (in Accountants' Office).

Office Attendant:
Robert O'Meara.

District Medical Officers of Health.
South Side.

Doctor Geo. A. Stritch,	No. 1 District.
„ John Barton,	„
„ F. T. P. Newell,	No. 2 District.
„ M. J. Russell,	„
„ G. P. Cope,	No. 3 District.
„ H. Day,	„
„ Herbert U. Byrne,	No. 4 District.
„ J. P. Quinn,	„

North Side.

Doctor J. H. McAuley,	No. 1 W. District
,, Henry W. Oulton,	,,
,, Thomas Donnelly,	No. 1 E. District.
,, J. D. Crinion,	,,
,, O'Connell J. Delahoyde,	No. 2 District.
,, Michael Strahan,	,,
(succeeded by Doctor Charles Casey).	
,, M. S. Walsh,	No. 3 District.
,, J. P. Garland,	,,

Drumcondra.
Doctor Richard Gibbs.

Clontarf.
Doctor J. O'Donoghue.

Glasnevin.
Doctor D. A. Mahony.

Kilmainham.
Doctor Mortimer Watters.

Superintendent of Sanitary Sub-Officers and Assistant Inspector of Explosives:
Charles Travers, *S.S.C.

Sanitary Sub-Officers:

Alfred T. Tutty, S.S.C.
James Clarke, S.S.C.
Thomas Brett, S.S.C.
Patrick J. Healy, S.S.C.
Nicholas Cloney, S.S.C.
James Quinn, S.S.C.
John Nolan, S.S.C.
James P. O'Reilly, S.S.C.
Daniel O'Brien, S.S.C.
Ellen M. Smith, S.S.C.
Terence Mooney, S.S.C.
Elizabeth M. Byrne, S.S.C.
Thomas S. Cuffe, S.S.C.
Margaret Ryan, S.S.C.
James Cahill, S.S.C.
Mary Lucas, S.S.C.
Michael Cassedy, S.S.C.
James Reynolds, S.S.C.
Richard F. Chadwicke, S.S.C.
Michael Keena, S.S.C.
Patrick O'Loughlin, S.S.C.
Thomas Fagan, S.S.C.
Michael Murphy, S.S.C.
James Cooke, S.S.C.
James A. Brennan, S.S.C.
Martin Conlan, S.S.C.
James Burns, S.S.C.
Patrick J. Breen, S.S.C.
Sergeant Richard Kelly, D.M.P.
John O'Neill, S.S.C.
Thomas Rowsome, S.S.C.
Maria T. Ryan, S.S.C.
Emily M. Brady, S.S.C.

* S.S.C.—Certificated in Sanitary Science by Royal Institute of Public Health.

Sanitary Plumber:

ROBERT DOYLE, R.P.C.

Clerks in Sanitary Office:

WILLIAM MCCARTHY, *Chief Clerk.* JOHN DOLAN.
RICHARD MAHER. DENIS COSGRAVE.

Surveyors of Buildings:

WALTER BUTLER. J. J. HIGGINBOTHAM. ROBERT DONNELLY

Shop Hours Inspectors:

J. J. SCOTT. MRS. LOUIE GALLAGHER.

Disinfecting Department—Superintendent of Disinfection:

HENRY EGAN, M.R.I.P.H., Lond.

Clerks:

ROBERT BARNES. HENRY CURRAGH.

Inquiry Officers:

JOHN G. WEBB, S.S.C. WILLIAM ADRIEN, S.S.C.

Operator of Steam Disinfector and Caretaker of Disinfecting House and Laundry:

JOSEPH FLYNN.

Chief Disinfector:

PETER MCINERNEY.

Boilerman:

JOHN QUINLAN.

Assistant Disinfectors:*

WILLIAM BYRNE, MICHAEL BARRON, and BERNARD FOX.

Driver of Ambulance:

PATRICK MURTAGH.

*A large number of temporary assistants are employed during epidemics of scarlet fever, small-pox, &c.

Drivers of Vans, &c.:

EDWARD KELLY, JAMES MARTIN, THOMAS TUOHEY,
JOHN DOWLING, and MATHEW DELANY.

Stableman:

JOHN COADY.

A staff of Limewashers, Scrapers, Laundresses, and Charwomen are constantly employed.

House of Refuge for Contacts with Disease:

Keeper:

DANIEL DOWLING.

Isolation Hospital, Pigeon House Road.

Caretaker:

MRS. KENNY.

Special Meat Inspectors:

BERNARD DALY, S.S.C. JOSEPH MCNEANEY, S.S.C.
VINCENT P. DOYLE. HENRY KNOWLES.

Registrar and Chief Inspector of Dairies and Cowsheds:

JAMES COLLINS.

Inspectors of Dairies and Cowsheds:

PATRICK MARTIN, S.S.C. JAMES KANE, S.S.C.
TIMOTHY KEOGH, S.S.C.

Clerk under Contagious Diseases of Animals Acts:

JOHN J. KANE.

City Laboratory Staff (including Public Analyst's Private Assistants):

JOHN MACALLAN, F.R.S.E., F.I.C. S. G. LEVERIDGE, A.I.C.
J. ROGERS, A.I.C. B. COYLE, M.S.C.I.
J. MCGAUGHEY R. CARTY.
M. J. SHEAHAN. D. J. MCGRANE.
GERALD MCGAUGHEY.

Water Analyst:

ERNEST S. CAMERON, F.C.S.L.

Laboratory Clerks:

CHARLES COSGROVE. HENRY J. HAYES.

Laboratory Attendants:

BENJAMIN BRYAN. MICHAEL HENNESSY. F. MURPHY.

Baths and Wash-houses, Tara-street.

Superintendent: JOHN P. O'BRIEN.

Matron: MRS. A. O'BRIEN.

Ticket Issuer:

JAMES O'REILLY.

Firemen:

JOHN TOWNSEND. THOMAS KEITH.

Attendants:

P. LYNCH. J. BAITSON. ANNE KENNEDY.

B. BAITSON.

CORPORATION CHILDREN'S COURT.

Councillor CHARLES A. JAMES, J.P., *President.*

JOHN J. MCELHINNEY, *Registrar.*

REPORT

UPON THE

State of Public Health

AND THE

SANITARY WORK PERFORMED IN DUBLIN

During the Year 1908,

BY

SIR CHARLES A. CAMERON, C.B.

Superintendent Medical and Executive Officer of Health and City Analyst.

POPULATION.

The City of Dublin is situated in latitude 53° 20′ 38″ N.; longitude 6° 17′ 30″ W. The Area of the City comprises 7,745 acres of land and 166 acres of water —total area, 7,911. The City and the adjacent townships of Rathmines, Pembroke, Blackrock, and Kingstown, and portions of some rural districts, comprise the Dublin Metropolitan Registration Area. The population of the Dublin Registration Area was estimated to be 378,994 in the middle of the year 1908. In April, 1891, it was 349,594. In a little more than ten years there was

an increase of 29,400—an increase all the more remarkable, as the population in 1881 was almost the same as in 1901. The large increase of population was in both City and Suburbs. It is the first Census since 1851 that the City population did not show a decrease. In the Census year, 1901, the population of the Metropolitan Area was 376,081, and of the City 291,190.

The population of the City, or Municipal districts was estimated to be 303,874 in the middle of 1908.

The population of the City, exclusive of the added areas, was 270,798, and of the added areas 33,076.

In 1901 the Townships of Clontarf, Drumcondra, and Kilmainham were added to the City. Their population in 1891 was 19,664. This population and its increase in ten years, the population of a small portion of the County of Dublin added to the City, and the increase in the population of the City itself, raised the population of the City of Dublin from 245,001 in 1891 to 290,638* in 1901, an increase of 45,637.

In 1851 the population of the City of Dublin was 258,361, and from that year it gradually declined to 245,001 in 1891. From that year to 1901 there was a remarkable increase of 21,134. This increase and the annexation of certain adjacent districts raised the population to 290,638 according to the Census of 1901.

The increase was largely due to diminished emigration, a decrease in the death rate, and an increased Jewish immigration.

*Date of Census, 1st April, 1901.

In 1901 the population of the Dublin Registration Area, estimated to the middle of that year, was 376,081, and of the City, 291,190. In the middle of 1902 the Registrar-General estimated the population of the Metropolitan Area to be 378,994, and that of the City to be 293,385.

No estimate of increase was made in 1903, 1904, 1905, and 1906, but in the Weekly Reports in the year 1908, the population of the Metropolitan Area is estimated at 394,525, and of the City, 300,850.

Density of Population.

The number of persons residing in the whole area was in the ratio of 28.7 per acre, and in the City, 38.4 per acre.

Table showing Ages of Population in City of Dublin, Census 1901.

Poor Law Unions and Registrars' Districts	Population		Age Periods.																					
	Total Persons	Sexes	Under 1 year	1 and under 5	5 and under 10	10 and under 15	15 and under 20	20 and under 25	25 and under 30	30 and under 35	35 and under 40	40 and under 45	45 and under 50	50 and under 55	55 and under 60	60 and under 65	65 and under 70	70 and under 75	75 and under 80	80 and under 85	85 and under 90	90 and under 95	95 and under 100	100 and upwards
TOTAL OF CITY OR COUNTY BOROUGH	290,638	M.140,388	3481	12068	13597	13180	15310	16105	13516	11056	9110	8563	6435	6102	3728	3934	1879	1307	611	312	70	18	5	1
		F.150,250	3355	12017	13673	13267	14979	17298	15169	11656	9955	9365	6881	7368	4360	5064	2225	2021	793	605	130	56	10	3

Table showing Area, Houses and Population in 1891 and 1901 in each Ward or District Electoral Division in the City of Dublin; also the General Valuation, Census 1901.

Ward or District Electoral Division	Area in Statute acres in 1901	Valuation of Houses and Land 1901	Houses		Population			
			1891	1901	1891	1901		
						Persons	Males	Females
Total of City ...	A. R. P. 7,910 3 15	£ s. d. 818,960 16 0	33,295	35,460	268,650	290,638	140,388	150,250
Arran Quay Ward ...	569 0 0	56,170 15 0	2,903	3,424	26,546	31,109	15,457	12,652
Clontarf, East ,, ...	741 3 7	13,292 1 0	979	574	5,238	3,081	1.397	1,684
Clontarf, West ,, ...	696 2 14	14,761 15 0		758		3,849	1,877	1,972
Drumcondra ,, ...	722 1 19	24,136 15 0	1,047	1,293	6,453	7,545	3,533	4,012
Fitzwilliam ,, ...	202 0 12	51,642 15 0	1,655	1,679	11,949	12,455	5,330	7,125
Glasnevin ,, ...	852 3 32	21,452 8 0	535	1,095	3,136	6,273	3,135	3,138
Inns Quay ,, ...	226 0 0	45,063 10 0	2,576	2,623	22,496	24,940	11,982	12,958
Mansion House ,, ...	114 0 5	35,447 10 0	1,085	1,058	11,096	11,892	5,383	6,509
Merchants' Quay ,, ...	312 3 13	38,379 0 0	2,800	3,204	23,034	25,434	12,398	13.036
Mountjoy ,, ...	221 0 21	42,491 0 0	2,810	2,850	22,469	24,840	11,984	12,856
New Kilmainham ,, ...	906 1 5	17,039 2 0	1,248	1,365	7,916	8,783	4,651	4,132
North City ,, ...	82 0 14	45,458 10 0	1,405	1,290	9,774	8,784	4,332	4,452
North Dock ,, ...	565 0 1	78,750 0 0	3,224	3,096	23,075	23,634	11,836	11.798
Rotunda ,, ...	138 0 4	36,023 0 0	1,486	1,524	12,549	14,580	6,485	8 095
Royal Exchange ,, ...	71 1 3	52,471 5 0	963	940	8,766	7,648	3,662	3,986
South City ,, ...	54 1 27	57,144 5 0	968	819	4,599	4,385	2,081	2,304
South Dock ,, ...	403 1 13	53,691 0 0	1,844	1,824	15,172	14,766	6,998	7,768
Trinity ,, ...	160 0 27	49,272 10 0	1,248	1,220	12,176	12,331	6,000	6,331
Usher's Quay ,, ...	712 1 21	52,282 10 0	2,045	2,308	21,758	23,655	11,705	11,950
Wood Quay ,, ...	159 1 7	33,991 5 0	2,474	2,516	20,448	20,654	10,162	10,492

TABLE SHOWING NUMBER OF FAMILIES IN THE CITY OF DUBLIN, OCCUPYING EACH CLASS OF HOUSE ACCOMMODATION IN 1891.

CLASS OF HOUSES	HOUSE ACCOMMODATION				Total Families	Total Houses
	1st Class	2nd Class	3rd Class	4th Class		
1st Class	4,694	2,990	5,140	12,166	25,260	8,720
2nd ,, ...	—	10,289	6,845	6,908	24,042	14,638
3rd ,, ...	—	—	2,281	261	2,542	2,399
4th ,, ...	—	—	—	7	7	7
TOTAL	4,694	13,279	14,266	19,342	51,851	25,764

TABLE SHOWING NUMBER OF FAMILIES WHICH OCCUPY EACH CLASS OF ACCOMMODATION IN 1901.

IN HOUSES of the	NUMBER OF FAMILIES OCCUPYING			TOTAL	
	1st Class Accommodation	2nd or 3rd Class Accommodation	4th Class Accommodation	Families	Houses
1st Class	4,635	7,511	14,141	26,287	8,637
2nd and 3rd Class	—	25,688	7,277	32,965	23,413
4th Class ...	—	—	11	11	11
TOTAL ...	4,635	33,199	21,429	59,263	32,061

First class accommodation means houses occupied each by 1 family; 2nd and 3rd class accommodation consists of 2nd class houses occupied by 1 family, or 1st class houses occupied by 2 or 3 families; 3rd class houses means 3rd class houses each with 1 family, or 2nd class ones with 2 or 3 families, or 1st class occupied by 4 or 5 families; 4th class includes all 4th class and 3rd class houses with more than 1 family, and 2nd class houses with 4 or more families, and 1st class houses with 6 or more families.

*Table showing the Number of Tenements of One Room and the Number of Occupants of such Tenements in each Ward of the City of Dublin.

WARDS	Tenements of One Room Occupied by												
	Total Number	1 Person	2 Persons	3 Persons	4 Persons	5 Persons	6 Persons	7 Persons	8 Persons	9 Persons	10 Persons	11 Persons	12 Persons and upwards
DUBLIN CITY	21,747	3,278	5,544	4,392	3,384	2,302	1,477	797	362	145	47	13	6
Arran Quay ...	1,680	322	456	334	227	168	98	43	17	4	1	—	—
Clontarf, East...	1	—	—	—	—	—	1	—	—	—	—	—	—
Clontarf, West	32	20	8	2	—	2	—	—	—	—	—	—	—
Drumcondra ...	62	20	20	6	6	4	2	1	2	—	1	—	—
Fitzwilliam ...	704	167	195	139	87	66	32	14	3	1	—	—	—
Glasnevin ...	64	19	18	9	11	4	2	1	—	—	—	—	—
Inns Quay ...	1,977	304	477	434	331	196	129	66	27	9	3	—	1
Mansion House	1,428	227	364	308	200	156	85	50	26	6	6	—	—
Merchants' Quay	2,008	305	438	403	306	243	179	77	39	11	6	1	—
Mountjoy ...	2 439	290	618	485	401	280	181	95	46	31	8	2	2
New Kilmainham	184	35	54	42	18	14	14	5	2	—	—	—	—
North City ...	755	87	224	169	108	76	49	23	9	6	2	1	1
North Dock ...	1,916	262	530	370	305	189	123	81	35	11	6	4	—
Rotunda ...	1,402	272	430	266	191	116	64	36	16	7	3	1	—
Royal Exchange	737	133	212	141	102	60	44	19	14	9	2	1	—
South City ...	322	51	80	67	54	31	19	11	6	2	—	—	1
South Dock ...	1,200	179	325	253	210	113	68	36	9	6	1	—	—
Trinity ...	1,358	141	306	265	225	174	108	88	32	14	2	2	1
Usher's Quay ...	1,627	217	354	338	284	180	132	71	37	10	3	1	—
Wood Quay ...	1,851	217	435	361	318	230	147	80	42	18	3	—	—

* Census, 1901.

TENEMENT HOUSES.

TABLE SHOWING THE TOTAL NUMBER OF OCCUPIERS OF LESS THAN 5 ROOMS IN TENEMENT HOUSES IN EACH WARD OF THE CITY OF DUBLIN IN 1902.

WARDS	Occupiers (or Heads of Families) occupying				
	Part of a room	1 room	2 rooms	3 rooms	4 rooms
DUBLIN CITY	92	21702	13620	5971	5484
Arran Quay	22	1669	1086	614	763
Clontarf, East	—	1	138	39	29
Clontarf, West	—	32	54	51	80
Drumcondra	—	62	114	80	253
Fitzwilliam	—	704	573	249	249
Glasnevin	—	64	103	81	72
Inns Quay	34	1961	1029	658	513
Mansion House	8	1424	624	161	95
Merchants' Quay	8	2004	1504	617	616
Mountjoy	2	2438	1152	416	557
New Kilmainham	—	184	418	246	253
North City	4	753	605	233	107
North Dock	2	1915	1040	627	548
Rotunda	—	1402	746	232	199
Royal Exchange	2	736	382	162	85
South City	—	322	287	159	73
South Dock	2	1199	848	354	266
Trinity	—	1358	600	204	136
Usher's Quay	4	1625	1248	435	344
Wood Quay	4	1849	1069	353	300

METEOROLOGICAL STATISTICS.

I am indebted to Sir John W. Moore, M.D., Ex-President R.C.P., for the following Meteorological Report:—

Rainfall in 1908.

At 40 Fitzwilliam Square, Dublin.

Rain Gauge:—Diameter of Funnel, 8 in. Height of top—Above ground, 1 ft. 4 in.; above sea level, 50 ft.

Month	Total Depth	Greatest Fall in 24 hours		Number of Days on which .01 or more fell
	Inches	Depth	Date	
January, -	2.055	.713	6th	16
February, -	1.372	.384	14th	20
March, -	2.940	.703	5th	22
April, -	2.337	.914	27th	16
May, -	1.374	.228	14th	21
June, -	1.651	.349	16th	12
July, -	2.080	.522	7th	13
August, -	3.435	1.650	20th	15
September, -	2.313	.458	8th	19
October, -	1.219	.219	20th	13
November, -	1.237	.362	13th	12
December, -	1.740	.740	28th	19
Total, -	23.753	1.650*	Aug. 20th*	198

* Maximum

The rainfall was 23.753 inches, or 4.247 inches less than the average annual measurement of the thirty-five years, 1871-1905, inclusive—viz., 28.000 inches.

It is to be remembered that the rainfall in 1887 was very exceptionally small—16.601 inches—the only approach to this measurement in Dublin being in 1870, when only 20.859 inches fell; in 1884, when the measurement was 20.467 inches; and in 1883, with its rainfall of 20.493 inches.

The scanty rainfall in 1887 was in marked contrast to the abundant downpour in 1886, when 32.966 inches—or as nearly as possible double the

fall of 1887—fell on 220 days. In 1900 the rainfall was 34.338 inches, or 6.338 inches in excess of the average for the thirty-five years, 1871-1905. Only twice since these records commenced has the rainfall in Dublin exceeded that of 1900—namely, in 1872, when 35.566 inches fell on 238 days, and in 1880, when 34.512 inches were measured on, however, only 188 days. In 1907 the rainfall was 26.994 inches on 218 days.

In 1908 there were 198 " rain days " or days upon which not less than .005 inch of rain (five-thousandths of an inch) was measured. This was exactly the average number of rain-days, in the thirty-five years, 1871-1905, inclusive. In 1868 and 1887—the warm, dry years of recent times—the rain-days were only 160, and in 1870 they were only 145.

On only one occasion in 1908 did one inch of rain fall on a given day in Dublin—viz., August 20th, 1.650 inches. In 1901, the rainfall only once exceeded one inch, but on that occasion (November 11th) the measurement was 2.037 inches. In 1902, 1.342 inches fell on July 25th, and 2.075 inches on September 2nd. In 1903 the maximal daily rainfall was .966 inch on September 10th. In 1904, 1.092 inches fell on May 31st, and 1.197 inches on September 12th. The excessive rainfall on August 25th, 1905, is especially noteworthy—it amounted to 3.436 inches in Dublin (Fitzwilliam Square). It was the ninth occasion only since 1865— that is, in 44 years—upon which 2 inches have been measured in Dublin at 9 a.m. as the product of the preceding 24 hours' precipitation. The previous excessive

falls were—August 13th, 1874 (2.482 inches); October 27th, 1880 (2.736 inches); May 28th, 1892, 2.056 inches; July 24th, 1896, 2.020 inches; August 5th, 1899 (2.227 inches); August 2nd, 1900 (2.135 inches); November 11th, 1901 (2.037 inches); and September 2nd, 1902 (2.075 inches). On no previous occasion within the past 44 years had 3 inches or upwards been measured.

Included in the 198 rainy days in 1908 are 16 on which snow or sleet fell, and 25 on which there was hail. In January hail was observed on one day, in February on 5 days, in March on 5 days, in April on 4 days, in May on 5 days, in June on one day, in August on one day, in November on one day, and in December on 2 days. Snow or sleet fell on 2 days in January, 4 days in February, 6 days in March, 3 days in April, and one day in December. Thunderstorms occurred on May 12th and 31st, and on July 16th. Thunder was heard without visible lightning twice in July. Lightning was seen once in February, July, November and December.

The rainfall in the first six months was 11.729 inches on 107 days. In the second six months it was 12.024 inches on 91 days.

The rainfall was distributed quarterly as follows:—6.367 inches fell on 58 days in the first quarter, 5.362 inches on 49 days in the second, 7.828 inches on 47 days in the third, 4.196 inches on 44 days in the fourth quarter.

More or less fog prevailed on 33 occasions—7 in January, 6 in March, 3 in April, 1 in June, 1 in July, 4 in October, 3 in November, and 8 in December. High winds amounted to gales (force 8 or

upwards, according to the Beaufort scale) on 18 occasions—4 in January, 3 in February, 6 in March, 1 in August, 2 in November, and 2 in December.

Solar halos were seen on 15 occasions, a lunar halo on 18 nights, a lunar corona on 8 nights. Aurora borealis was seen twice in April and once in August.

The year was remarkable for the coldness of the spring and the warmth of the autumn. Not since 1876 had such a spell of cold weather been recorded in April as that which made memorable the Easter Week of 1908. The remarkable point about this cold snap was its occurrence in one of the coldest—and most persistently cold—springs of recent times. March was unsettled, rainy, but—above all—cold: its mean temperature was only half a degree (Fahrenheit) above that of the previous January, and was actually 2.8° below that of its predecessor, February. And April was proportionately severe, while the defect in temperature in fact increased as the month advanced. On Friday, the 24th, a bitterly cold wave from the northward reached Ireland and England—snow and hail fell in large quantities, and intense night-frosts threatened the promise of spring. In Dublin the mean temperature of Friday, the 24th, was 32.9°, or 14.7° below the average, the extremes being—lowest, 25.1°; highest, 40.7°.

September was generally cool, but a remarkable spell of very unusual warmth which set in on the 27th raised the mean temperature to the average for the month.

October, 1908, will be remembered as the warmest October on record within recent times. The mean temperature (55.4°) was 5.9° above the average. On 17 days the thermometer rose to 60° or upwards in the screen—daily until the 15th. Once only did it fail to reach 50°—on the 24th, when the maximum was 48.4°. The mean minimum in the screen for the month was 50.6°, identical with the value for the previous month; and the mean minimum on the grass was as high as 46.5°, or actually 0.4° in excess of the figure recorded in September, 1908.

November was mild and open, ranking third in the list of warm Novembers observed within the past forty-four years; and December also was—for the most part—mild, the mean temperature being 2.3° above the average.

Mr. Robert O'Brien Furlong, M.A., C.B., reports relative to the rainfall in 1908 at Cloneevin, Killiney:—The total number of inches was 25.66 on 196 days, compared with 22.34 inches on 201 days in 1906, and 25.94 inches on 203 days in 1907.

The rainfall of 1908 is 2.013 inches below the average of 23 years (1885-1907)—viz., 27.673 inches.

The number of days on which .01 inch or upwards fell—viz., 196—is 10 in excess of the average for the same period—viz., 186 days.

The greatest amount measured in any month during 1908 was 3.67 inches on 14 days in August; the smallest, .92 inch, on 17 days in February.

The heaviest fall in 24 hours was on August 20, when 2.09 inches fell.

Abstract of Meteorological Observations taken at Dublin (40 Fitzwilliam-square, West) during the Year 1908.

MONTH.	Abs. Max.	Date.	Abs. Min.	Date.	Mean Daily Max.	Mean Daily Min.	Rainfall.	Rain Days.	Mean Height of Barometer.	Highest Pressure.	Date.	Lowest Pressure.	Date.	Prevalent Winds.
	°		°		°	°	"		"	"		"		
January, -	55·9	16th	22 8	5th	45·9	37·1	2·055	16	30·087	30·500	20th	29·246	7th	S.W., S.W.
February, -	53·2	22nd	33·0	29th	48·8	40·7	1·372	20	30·110	30·764	6th	29·2.0	28th	W., N.W.
March, -	57·0	8th	30·0	5th	47·8	36·1	2·940	22	29·809	30·199	14th	28·994	6th	W., W.N.W., N.W.
April, -	63·4	30th	25·1	24th	51·0	38·4	2·337	16	29·994	30·490	6th	29·312	24th	N.E., N., N.W.
May, -	68·0	17th	41·0	7th	61·7	48·7	1·374	21	29·913	30·516	27th	29·144	5th	S.W., W., E.
June, -	71·3	29th	44·6	7th	63·5	50·4	1·651	12	30·083	30·437	24th	29·441	13th	N.W., N.E.
July, -	74·7	4th	49·0	15th & 19th	67·3	54·6	2·080	13	29·987	30·465	29th	29·295	17th	N.W., S.W., W.
August, -	76·3	3rd	47·2	11th	65·0	53·1	3·435	15	29·973	30·422	2nd	29·085	31st	N.W., W.,
September, -	74·4	30th	39.0	12th	61·3	50·6	2·313	19	29·885	30·236	5th	29·020	1st	S.W., W., N.W.
October, -	68·7	2nd	38·0	26th	60·1	50·6	1·219	13	30·038	30·463	22nd	29·725	8th	S.E, S.
November, -	59·6	11th	31·1	30th	52·8	43·3	1·237	12	29·978	30 403	30th	29·456	22nd	S.W., W.
December, -	56·7	21st	27·9	16th	48·4	38·9	1·740	19	29·785	30·356	1st	28·698	10th	S., S.W., W
Extremes, Totals, and Means.	° 76·3	Aug. 23rd	° 22·8	Jan. 5th	° 56.1	° 45·2	" 23·753	Days 198	" 29·970	" 30·764	Feb. 6th	" 28·698	Dec 10th	W., S.W., N.W.
					50·7°									

JOHN WILLIAM MOORE, M.A., M.D., D.P.H., Dubl.; D.Sc, Oxon.; F.R.C.P.I.; F. R. Met. Soc.

January 1, 1909.

I am indebted to the Principal Royal Engineer, in the Mountjoy Barracks, Phœnix Park, which lies on the West Side of the City, for the following Table.

ORDNANCE SURVEY OFFICE, PHŒNIX PARK, DUBLIN.

Abstract of Meteorological Observations for the Year 1908.

Latitude 53° 21′ 48″ 25 North—Longitude 6° 20′ 59″ 15 West—Height above M.S.L., 155·3 Feet.

1908.	BAROMETER. Corrected for Altitude and reduced to 32° Fah. Mean 9 0 a.m.	Mean 9 0 p.m.	Mean Mean	Mean Range	Highest in month	Lowest in month	Range	TEMPERATURE. Self-Registering Thermometers Highest in month	Lowest in month	Range	Mean Of all highest	Mean Of all lowest	Mean Temp.	Mean Range	Hygrometer 9.0 a.m. mean Dry bulb	Wet bulb	Dew point	Elastic force of vapour	Humidity	RAIN. Number of days rain or snow fell	Total amount for month	Greatest amount that fell in 24 hours	OZONE 9.0 a.m.	CLOUD. Monthly Total	Daily Mean
January ...	29·904	29·920	29·912	0·016	30·320	29·074	1·246	53·1	18·0	35·1	45·9	33·9	39·9	12.0	39·6	38·2	35·9	·225	87·4	18	2·320	·730	·5	214	6·9
February ...	29·913	29·947	29·930	0·034	30·582	29·031	1·551	52·6	31·4	21·2	48·3	39·1	43·7	9·2	43·5	42·1	40·6	·255	90·1	23	1·817	·575	·5	243	8·4
March ...	29·628	29·634	29·631	0·006	30·019	28·917	1·102	56·3	23·4	32·9	47·6	32·9	40·3	14·7	41·2	39·3	36·9	·218	86·0	24	1·924	·345	·5	221	7·1
April ...	29·814	29·816	29·815	0·002	30·313	29·211	1·102	63·4	23·9	29·5	50·3	34·0	42·2	16·3	44·6	42·1	39·2	·244	81·5	20	2·256	·660	·5	238	7·9
May ...	29·749	29·736	29·743	0·013	30·349	29·043	1·306	70·6	37·9	32.7	60·5	45·0	52·8	15·5	54·6	51·6	48·7	·350	81·2	20	1·788	·290	·6	233	7·5
June ...	29·909	29·916	29·913	0·007	30·259	29·289	0·970	71·6	36·9	34·7	63·5	45·2	54·4	18·3	57·0	53·5	50·3	·372	78·8	15	1·404	·295	·5	213	7·1
July ...	29·815	29·819	29·817	0·004	30·304	29·159	1·145	77·3	42·7	34·6	67·4	51·6	59·5	15·8	60·7	57·0	53·9	·442	79·2	14	2·236	·520	·6	226	7·3
August ...	29·821	29·792	29·807	0·029	30·251	28·973	1·278	76·9	41·0	35·9	64·7	49·7	57·2	15·0	58·3	55·8	53·5	·413	84·7	16	2·875	1·210	·5	252	8·1
September ...	29·711	29·738	29·725	0·027	30·071	28·999	1·072	71·2	34·9	36·3	61·2	46·8	54·0	14·4	56·1	54·2	52·5	·400	88·4	20	3·076	·575	·5	240	8·0
October ...	29·878	29·878	29·878	0·000	30·301	29·582	0·719	72·8	31·0	41·8	60·7	46·1	53·4	14·6	55·2	53·3	51·3	·389	90·1	16	1·418	·273	·3	266	7·3
November ...	29·846	29·819	29·833	0·027	30·251	29·304	0.947	59·3	23·9	35·4	52·9	39·6	46·3	13·3	46·3	44·1	41·6	·268	84·2	16	1·295	·285	·5	206	6·8
December ...	29·643	29·636	29·640	0·007	30·206	28·623	1·583	56·7	24·9	31·8	48·2	34·8	41·5	13·4	41·3	39·8	37·9	·234	88·3	19	1 790	·350	·5	215	6·9
Total ...	357·631	357·651	357·644	—	—	—	—	—	—	—	671·2	493·7	585·2	—	598·4	571·0	542·3	3·810	1019.9	221	24·199	—	6·0	2·727	89·3
Mean ...	29·803	29·804	29·804	—	—	—	—	—	—	—	55·9	41·6	48·8	—	49·8	47·6	45·2	·318	85·0	—	—	—	·5	·227	7·4

WIND. Number of days it blew in certain directions at 9.0 a.m. and the total pressure in lbs. per square foot.

N.	Pressure	N.E.	Pressure	E.	Pressure	S.E.	Pressure	S.	Pressure	S.W.	Pressure	W.	Pressure	N.W.	Pressure	Calm
1	0·19	1	0·06	4	2·94	0	0·00	5	5·06	11	9·32	2	2·56	1	1·50	6
0	0·00	0	0·00	1	0·13	0	0·00	1	0·38	8	9·38	17	6·82	1	1·50	1
6	3·44	4	4·31	5	2.32	0	0·00	1	2.32	3	0·56	5	2·57	2	1·13	4
3	1·44	3	0·44	3	1·44	1	0·31	5	4·19	12	4·14	0	0·00	1	0·62	3
4	1·52	2	0·25	6	1·13	0	0·00	4	4·00	6	2·57	3	0·88	3	0·66	2
0	0·00	0	0·00	2	0·26	1	0·19	2	0·94	11	3·76	8	1·02	3	0·25	4
1	0·19	3	0·37	3	0·63	0	0·00	1	0·44	14	6·05	4	1·07	3	0·94	2
1	0·62	0	0·00	4	0·57	3	0·32	5	5·12	8	3·96	5	1·25	2	0·25	2
1	0·06	1	0·13	5	0·57	8	2·64	4	2·31	1	0·62	1	0·06	1	0·06	9
0	0·00	0	0·00	3	0·50	3	0·51	3	1·06	5	5·62	8	2·57	0	0·00	8
0	0·00	0	0·00	1	0·13	3	2·51	2	0·62	9	3·82	5	1·96	0	0·00	11
17	7·46	14	5·56	38	10·93	21	8·29	37	34·13	92	52·49	68	26·26	20	8·73	59
—	0·62	—	0·46	—	0·91	—	0·69	—	2·84	—	4·37	—	2·19	—	0·73	—

The Highest Barometer during the Year was 30·582 on 6th February, at 9 p.m., Wind W.S.W.
The Lowest do. do. 28·623 on 10th December at 9 p.m., do. S.W.
The Highest Temperature do. 77·3 on 4th July.
The Lowest do. do. 18·0 on 5th January.

Rain or Snow fell on 221 days during the year.
The Greatest Rainfall in 24 hours was 1·210 inches on 20th August, with Wind E.N.E.
The Prevailing Wind was S.W. on 92 days.
The Strongest Wind was S.S.W. on 29th March, on which the pressure was 5·50 lbs. per square foot.

VITAL AND MORTAL STATISTICS OF THE DUBLIN METROPOLITAN REGISTRATION AREA, 1907.

The Public Health Committee are much indebted to the Registrar-General for his courtesy in supplying them with the weekly accounts of the vital statistics of Dublin on the mornings on which their meetings are held. The statistics are not published until the evenings of the same days, and the Committee have the early intimation, which is very useful, especially in periods of epidemics.

I have personally to express my high sense of the courtesy of the Registrar-General, who is always ready and willing to have any information available in his great department supplied when asked for.

In some respects the returns of the Irish Registrar-General supply information which is not afforded in the return of the English and Scotch Registrars-Generals—for example, the occupations of decedents.

Births.

In 1908 (53 weeks) the births in the whole Registration Area numbered 11,500 (5,858 boys and 5,642 girls), being equal to 1 in 35, or 28.7 in every 1,000 of the estimated population. The average rate for the preceding ten years was 28.6 per 1,000. In London the birth-rate was 25 per 1,000, in Glasgow 28 per 1,000, and in Edinburgh 21 per 1,000, inhabitants.

Of the 11,500 births, 9,833, or 32 in every 1,000 of the estimated population, occurred in the City, and

1,667, or only 17 per 1,000 of the inhabitants in the suburbs.

The births were more by 542 than in 1907.

Of the 11,500 births, 2,854 were registered in the first quarter, 3,062 in the second quarter, 2,865 in the third, and 2,719 in the fourth quarter of the year. The weekly average was 217.

The excess of births over deaths per 1,000 persons living was 2,739 in the City, and 127 in the suburban townships.

As compared with 1907, the birth rate in Dublin was 0.7 per 1,000 higher, whilst in London, Glasgow and Edinburgh it was 2 per 1,000 lower. Generally in British towns the birth rate is declining; in Dublin the rate is fairly maintained.

It is well known that the birth rate in France, dealing with the purely French population, is not in excess of the death rate. In England the birth rate has been steadily falling for many years past. In 1907, of 12 Continental countries, 9 have had higher birth rates than England and Wales, and only three (France, Belgium, and Sweden) have had lower birth rates. In Russia the birth rate for 5 years averaged no less than 20 per 1,000 in excess of that of England and Wales. In Ireland the birth rate in 1907 was 4.9 below the rate in England, and in the five years, ended in 1907, there was a decline of 3 per 1,000 in the rate. Under these circumstances it is satisfactory to find that the birth rate shows so slight a decline. In 1871 the rate in Dublin was 29 per 1,000 persons, and in London 35. In 1908 the rate in London was 26.9 and in Dublin 28.7. The average rate in the 10 years ended 1873 was

28 per 1,000 persons living. In the 10 years ended in 1900 the average rate was 27, and in the decade ended in 1908 the rate was 28.6. The figures refer to the Dublin Registration area, but in the City the rate was higher : in 1908 it was 32.

Deaths.

Deaths from all Causes.—During the year 1908 the deaths of 9,070 persons (4,483 males and 4,587 females) were registered as having occurred within the Dublin Registration Area. Omitting 436 deaths of persons admitted into public institutions from places outside the Dublin Registration Area, the deaths numbered 8,646, and the death-rate was 21.5 per 1,000, of the estimated population. Including those 436 deaths, the rate was 22.6 per 1,000, and was 2.4 (or 9.6 per cent.) below the mean death-rate for the previous 10 years. In 1903 the death-rate was 22.8, and was the lowest death-rate recorded in Dublin since accurate registration of deaths commenced. 1905 had a lower death-rate —21.2. In 1906 the rate was 23.4, and in 1907 was 22.4.

Of the 9,447 deaths chargeable to the Dublin Registration Area, 7,094 occurred in the City, and 1,540 in the Suburbs.

The death-rate was 23 in the City, and 16.7 in the Suburbs.

Of the 9,070 deaths, 2,619 occurred in the first quarter of the year, 2,109 in the second, 1,051 in the third, and 2,291 in the fourth. The weekly average was 171. In 1907, it was 162.

Of the 9,070 deaths no fewer than 3,884, or 42.8 per cent., occurred in the various workhouses, hospitals, lunatic asylums, and prisons; 835 deaths took place in the North Dublin Union Workhouse, 975 in the South Dublin, 45 (those admitted from the Dublin Registration Area) in the Rathdown Union Workhouse, and 2,029 in the various hospitals, prisons, and lunatic asylums. In the large English towns only about 18 per cent. of the deaths take place in public institutions. These facts seem to show that the proportion of poor and destitute people in Dublin is much larger than in the English towns.

Deaths from Zymotic Diseases.—The number of deaths from the principal zymotic diseases was in the whole Registration Area, 698, or 1.7 per 1,000 of the population. (The average rate for the preceding 10 years was 2.3.) In the City the rate was 1.9 per 1,000, and in the Suburbs 1. The average rate in the City in the preceding 10 years was 2.4.

Corrected Death-rate for Dublin (City).

As pointed out in previous Annual Reports, the recorded death-rate of towns requires to be corrected for age and sex distribution. Females live longer than males. It follows, therefore, that if two towns were in an equally healthy state, but that one of them contained a larger proportion of females than the other, the town with the lower proportion of females would have the higher death-rate. Similarly, a town, a larger proportion of the inhabitants of which were at the most favourable periods of life, would have a lower death-rate than

a town equally healthy, in which the ages of the population were less favourable to longevity. The death-rate at different ages in the whole of England and Wales being ascertained, the Registrar-General of those countries corrects the recorded death-rates in the towns in which the ages of the population vary from those of the country at large.

There are very few towns in which it is necessary to reduce the crude, or recorded, death-rate; in nearly all the other towns it is necessary to increase it, and in some, like Manchester, very largely. In Dublin the ages of the population are favourable as regards longevity, and in Belfast they are even more so.

Annual rate of mortality corrected for differences of sex and age of the respective populations, and by the exclusion of non-municipal deaths occurring in Public Institutions in 1908 :—

	Crude Death-rate	Corrected Death-rate
Dublin	21.5	23.4
Belfast	19.5	22.3
Cork	22.0	24.0

Deaths in the City of Dublin, or Municipal Districts, in 1908.

The total number of deaths from all causes was 7,094, or in the ratio of 23 per 1,000 persons living, and was 1.7 below that of 1907. The crude death-rate was 24.1 in 1906, 22.3 in 1905, 24.9 in 1904, 24.7 in 1903, 26.2 in 1902, 26.0 in 1901, 30.3 in 1900, 33.6 in 1899, 28.5 in 1898, 31.59 in 1897, 27.4 in 1896, 30.1 in 1895, 26.6 in 1894, 29.1 in 1893, 31.9 in 1892, 28.5 in 1891, 28.1 in 1890, 27.9 in 1889, 26.2 in

1888, 33.2 in 1887, 28.4 in 1886, 30.69 in 1885, 29.96 in 1884.

Of the 7,094 deaths in 1908, 576 were caused by the principal zymotic diseases—measles, scarlet fever, typhus fever, whooping cough, diphtheria, continued ill-defined fever, enteric fever, and diarrhœal diseases.

DEATH-RATE IN MUNICIPAL AREA IN 1908.

Death-rate in the Four Quarters of 1908.

	General	Zymotic
First quarter	26.5	0.7
Second „	20·3	1.2
Third „	19.8	3.7
Fourth „	22.6	1.7
	22.3	1.8

The general and zymotic death-rates of 1907 were below the mean rates for the previous ten years, but were higher than in 1905, in which the general and zymotic death-rates were the lowest on record, namely, 22.3 and 1.5. It must, however, be taken into account that in the year 1901 three suburban townships were added to the City. Allowing for this, the death-rate in the City in 1907 was still below the average rate.

CAUSES OF DEATHS IN THE CITY OF DUBLIN IN 1908.

The death-rate in the City Districts is, of course, greater than in the Metropolitan Registration Area, which includes the Suburbs. In the latter the majority of the population are placed under far

more healthy conditions as regards air-space, house accommodation, pecuniary means, etc.

The birth-rate, too, is very low in the Suburbs. Their population practically increases only by immigration. In 1897 it was lower than the death-rate; in 1900 the rates were equal. In 1901, the death-rate was 0.3 per 1,000 in excess of the birth-rate, and in 1907 it was only 0.1 below the birth-rate.

Small Pox.

No death from small-pox was registered in Dublin from March, 1888, until June, 1894. In 1894, 64 deaths from this disease were registered, and in 1895 the number increased to 114. In 1896, 3 deaths from small-pox were recorded, in 1897 only 2. No death from this disease was recorded in the period 1898 to 1902, inclusive. An epidemic occurred in 1903, which caused 34 deaths. There were 4 cases of the disease in 1904, but no death resulted therefrom. The disease was non-existent in 1905, 1906, 1907 and 1908. The Corporation Isolation Hospital is always ready for the reception of patients, and is the best means of preventing the spread of smallpox, should a case of the disease occur.

Measles.

130 death were ascribed to measles in 1908. In the first quarter of the year there were only 2 deaths ascribed to it. In the second quarter the number rose to 39, to 50 in the third, and declined to 39 in the last quarter. I am hopeful that the decline will continue, but it will not be a rapid decline.

There was an epidemic of Measles, which prevailed from March to August, 1892, and then continued, but in a very mitigated form, during the rest of the year. In 1893 there were 81 deaths recorded from this disease, or 351 below the number in 1892, and in 1894 the deaths were further reduced to 42, and in 1895 only 3 deaths were ascribed to this disease. In 1896, 10 deaths from this disease were registered. In 1897 it again assumed an epidemic form, and caused 388 deaths, but in 1898 only 3 deaths from measles were registered. In 1899 there was an epidemic of measles, and the cases notified in that year numbered 5,554, and the deaths 568. The cases of this disease notified in 1900 numbered 611, and the deaths 75, of which 71 occurred in the first half of the year—62 of them in the first quarter. In 1901 only 7 deaths were registered. In 1902 there were 345 deaths. An epidemic of measles prevailed during the latter half of the year. The number of cases notified reached 4,000. In 1903, 32 deaths from it were registered in Dublin. In the Suburbs, which have much less than one-third of the population of the City, there were 16 deaths from measles. In 1904, 229 cases were notified, but in that year the compulsory notification of the disease was repealed, as no advantage worth considering had resulted from notification, and notification of the disease had been given up in nearly every other City. In 1905 there were 90 deaths from measles registered, and in 1906, 52. The disease almost attained to epidemic proportions in 1907, especially in the second quarter of the year, the deaths in that

quarter reaching 60. In the last quarter there were only 4 deaths from measles. The mortality caused by measles was greater in the Suburban Townships than in the City.

Scarlet Fever.

13 deaths caused by scarlet fever were registered in 1908, or 3 more than in 1907. 116 deaths from scarlet fever were registered in 1896, being 92 more than in 1895, and 78 in excess of the number registered in 1894. In 1897, 102 deaths from scarlet fever were registered, 63 in 1898, 124 in 1899, 22 in 1900, 21 in 1901, 57 in 1902, 38 in 1903, 17 in 1904, 18 in 1905, and 11 in 1906.

Typhus Fever.

3 fatal cases of typhus fever were registered in 1901, 8 in 1902, 2 in 1903, and 1 in 1904. No death from typhus fever was registered in 1905. In 1906, 4 deaths were caused by this, at one time, prevalent disease. In 1907, 19 houses were invaded by the disease; by far the greater number of cases occurred in Tyrone Street and immediate neighbourhood, in Chancery Lane and immediate neighbourhood, and in Power's Court, Lower Mount Street. In one house in Upper Tyrone Street 4 cases occurred, and 3 each in two other houses; 6 cases were notified from Chancery Lane. Most of the cases were traced to antecedent ones. In nearly all the houses in which the disease occurred there was poverty and its usual concomitant—filth. The majority of the attacks were in the first quarter of

the year, and dwindled down to 2 in December. The cases numbered 55, and the deaths 8. There were 7 cases of typhus fever in 1908, and in two instances terminated fatally; this was a high case mortality.

Whooping Cough.

75 deaths from whooping cough were registered in 1908, or less by 103 than the previous year. The deaths were 18 in the first, 19 in the second, 13 in the third, and 25 in the fourth quarters of the year.

In 1906 whooping cough was prevalent. In each of the first two quarters of the year there were 18 deaths due to whooping cough registered under each of the succeeding quarters, 28 or a total of 90 for the year. 34 fatal cases of whooping cough were registered in 1905. 218 deaths were registered in 1904, 128 in 1903, and 18 in 1902. In 1901 the number was 186; in 1900, 137; in 1899, 50; and in 1898, 131. This disease became epidemic late in 1896, and was prevalent throughout the year, causing 143 deaths. This number exceeded that for 1895 by 55, but was scarcely up to the mean annual number for the previous ten years. In 1897 it assumed serious proportions, and 332 deaths caused by it were registered. It was prevalent in 1904.

Diarrhœal Diseases.

275 deaths from diarrhœal diseases were registered in 1908 as against 174 in 1907, and 358 in 1906. In 1905, 282 deaths were ascribed to these diseases, and 281 in 1904. In 1903 there were 128

deaths from these diseases; in 1902, 198; in 1901, 310; and in 1900, 355. In 1905, out of a total of 490 deaths from the principal zymotic diseases no less than 282 were caused by diarrhœal diseases. The mortality was chiefly in the case of infants. The influence of the season on these diseases is shown by the fact that of the 275 deaths in 1908, only 11 occurred in the first quarter of the year, whilst 194 took place in the third quarter.

Enteric, or Typhoid Fever.

In 1908 there were 47 deaths from enteric fever registered.

I was disappointed that the deaths from this disease had increased beyond the numbers registered in the years 1905, 1896, and 1897 (40, 42, 32). 7 of the deaths were caused by drinking infected milk, as will be shown further on.

The following figures show, however, that the great decline which has taken place in this formidable disease during the last few years :—

Mean annual number of deaths in the quinquennial period 1893-1897, 126.

Mean annual number of deaths in the quinquennial period, 1898-1902, 101.

Mean annual number of deaths in the quinquennial period 1903-1907, 58.

Deaths per 10,000 persons living—

Mean rate 1881-1890, 4.8.

Mean rate 6 years, 1901-1906, 2.2.

Rate in 1907, 1.0.

In a former report I pointed out that my study of the incidence of several thousand cases of enteric fever in Dublin led me to infer that there was some connection between this disease and the soil. The City is built partly on boulder clay, partly on loose gravels. In the former the sub-soil or ground water rises to within a few feet (6 or 7) of the surface; in the latter the ground water is from 16 to 18 feet from the surface. On the loose soils the cases of enteric fever per 1,000 persons were 50 per cent. greater than on the stiff clays. Until of late years the privy system with large ashpits, generally with only clay floors, were very general in Dublin. The leakage from them must have rendered the soil very impure. The almost total abolition of the Midden system of excreta storage and replacement by the water closet system synchronizes with the decline of enteric fever. That would seem to indicate that the purification of the soil had some influence in checking the disease. Currents of air out of a freshly polluted soil might convey into the atmosphere some typhoid bacilli. In the large volume of air in the gravels there is greater room for the development of microbial life than in the air contained in dense stiff clays.

The following figures shew the number of fatal cases of enteric fever from 1891 to 1907:—

DEATHS FROM ENTERIC FEVER PER 10,000 OF THE POPULATION.

	NUMBER OF DEATHS.	RATIO OF DEATH PER 10,000 OF THE POPULATION.
1891	127	5·2
1892	91	3·3
1893	218	8·8
1894	104	4·2
1895	80	3·2
1896	101	4·2
1897	128	5·0
1898	135	5·5
1899	132	5·3
1900	99	4·0
1901	85	2·9
1902	98	3·3
1903	73	2·4
1904	61	2·0
1905	40	1·4
1906	44	1·5
1907	32	1·2
1908	47	1·8

Diphtheria.

There were 35 deaths ascribed to diphtheria in 1908. 46 deaths from that disease were registered in 1907, 17 in 1906, 24 in 1905, 22 in 1904, 52 in 1903, 50 in 1902, 54 in 1900, 50 in 1899, 47 in 1898, and 51 in 1897. Previous to 1897, the deaths from diphtheria were very few in Dublin. In 1896 there were 17 deaths ascribed to it, and in previous years the deaths did not exceed 12 per annum. In 1892 only 4 deaths from it were registered. Diphtheria has largely increased within recent years in Dublin, as is the case in many other cities and towns.

Pulmonary Tuberculosis, or Phthisis.

956 deaths from Phthisis were registered in 1908. This number was 18 less than in the previous year. It will be seen from these figures that whilst other zymotic diseases have shown a marked decline, Phthisis continues to claim about as many victims as it did formerly. Although Phthisis is that form of tuberculosis which causes the greatest mortality, due to the terrible micro-organism termed Bacillus Tuberculosis, yet there are other organs which are attacked by this organism. In 1907 tuberculosis in other organs of the body killed 474 persons, of whom the majority were children.

Number of Deaths from Phthisis in Dublin City.

Year.		Deaths.			Population
1908	...	956	...	...	303,874
1907	...	974	...	...	300,850
1906	...	937	...	...	293,385
1905	...	967	...	...	293,385
1604	...	953	...	...	293,385
1903	...	996	...	...	293,385
1902	...	1,049	...	...	293,385
1901	...	1,032	...	...	291,190
1900	...	1,029	...	...	245,001
1899	...	1,006	...	...	245,001
1898	...	953	...	...	245,001
1897	...	901	...	...	245,001
1896	...	828	...	...	245,001
1895	...	935	...	...	245,001

Under the auspices and active co-operation of Her Excellency the Countess of Aberdeen, wife of the Viceroy, what may be termed a campaign against tuberculosis has been going on since 1907. An important organization under the title of " The

Women's National Health Association " has been formed. Exhibitions relating to the disease have been held in Dublin and in other parts of Ireland, and are to be continued. Lectures on the subject have been delivered in Dublin and elsewhere, many of the lecturers being distinguished members of the medical profession. There has been an abundance of literature on the subject of tuberculosis. It is to be hoped that the means suggested for combating this terrible " white peril " may prove successful in lessening the amount of the group of diseases due to the ravages of the *bacilli tuberculosis*.

A Sanatorium for Consumptives.

In my report for 1907, I mentioned that, at length, a Joint Hospital Board had been formed to establish a Sanatorium for poor consumptives. A Provisional Order of the Local Government Board has been confirmed by Parliament, and has constituted a Joint Hospital Board. This Board consists of 31 members; of these 18 represent the County Borough of Dublin, 4 Balrothery Rural District, 2 Celbridge No. 2 Rural District, 3 North Dublin Rural District, 3 South Dublin Rural District, and 1 Dalkey Urban Council. Provision is made for admission into the combination of the Urban Districts of Rathmines, Pembroke, Kingstown, Blackrock, or of any Sanitary Authority that may be created in the County. The Local Government Board have the power of permitting the further additions to the Joint Hospital Board.

The Contributory Authorities can, according to the Act, levy a rate of one penny in the pound, which will raise a sum of about £5,300.

The Tuberculosis Prevention (Ireland) Act, 1908 (8 Edw. 7, ch. 56), section 10, enables the Local Authorities to impose a rate of twopence in the pound, provided that the Local Government Board consents. The Joint Hospital Board have purchased for the sum of £4,000 two hundred and ninety-six statute acres of mountain land on the western side of Dublin Mountains. The aspect is to the south. There is an excellent water supply from a spring producing about sixty gallons per minute. On this site it is proposed to erect a fully-equipped Sanatorium, together with the necessary staff, with accommodation for about 50 patients.

In 1909 an important Act was passed relating to Tuberculosis, and to which I have above referred. Part I. provides for the notification of cases of tuberculosis in such forms and stages as may be described by the Local Government Board, after consultation with the Presidents of the Royal Colleges of Physicians and Surgeons. A fee of 2s. 6d. per notification is to be paid in private cases, and 1s. when the notification is made by the Medical Officer of a Public Hospital, Infirmary or Workhouse.

Provision is made for disinfection of infected premises is the part of the Act not mandatory on the Local Authorities, which, I think, is to be regretted.

Part 2, section 4 (c) enables County Councils to establish and maintain Hospitals and Dispensaries, or enter into agreement with any person having the management of any Hospital or Dispensary, for the treatment of Consumptives. Power to establish

Joint Hospitals Board is given. A bacteriologist may be appointed, and samples of milk may be taken for bacterial examination. The Sanitary Authorities may issue leaflets, etc., relating to tuberculosis, and may provide drugs and appliances which would tend to prevent and check the spread of the disease. Compensation not exceeding £10 may be given to the owner of an animal affected with tuberculosis which is condemned as unfit for the food of man.

There are other useful provisions in this important Act.

Cerebro-Spinal Fever.

In 1907 there were 45 cases of cerebro-spinal fever, of which the first was notified on the 4th February. The disease continued during the three quarters of the year ended 30th September. No case occurred in the last quarter. The epidemic in 1907, and subjects relating to cerebro-spinal fever, were treated at some length in my Report for 1907.

State of Public Health in the City of Dublin in 1908.

The death rate was 23 per 1,000 persons living, and was 1.7 below the rate for the previous year.

The death rate from the principal zymotic diseases was 1.9 per 1,000, and was 0.1 above the rate in the year 1907, and 0.1 below the rate in 1906.

The high average death rate compared with the average death rate of the large English Towns is very striking. The zymotic death rate is not in

excess of the mean rate in the English Towns. In Dublin the death rate from the principal zymotic diseases has greatly fallen off during the last 20 years. In that period it has declined more than 50 per cent., whilst the deaths from all causes have also fallen in numbers, but not nearly so great as in the case of the zymotic maladies. The high death rate is, I believe, chiefly due to the excessive proportion of the very poor in the Dublin population as compared with the more prosperous towns in England. It is remarkable that whilst the rural death rate in Ireland compares favourably with that of England, the Irish urban death rate greatly exceeds that of the English towns.

In 1908 the mean rate of the 20 largest Irish towns was 20.2, whilst that of the 76 largest English town was 14.9.

The mean zymotic death rate in the Irish towns was 1.7, and in the 76 largest English towns 1.59.

There is, I venture to say, a very unusual amount of poverty in Dublin. In the poorest sections of the population in every town there is a higher rate of mortality than prevails amongst the population at large. Nearly one-third of the Dublin population, including the whole Metropolitan Registration Area, is composed of labourers, hawkers, porters, &c. More than one-third of the city population belong to the poorest classes. In 1908 the death rate in this class was 29.4 per 1,000. Of this class many end their days in the Workhouses, in which there are between six and seven thousand inmates. Of the Workhouse inmates nearly one-third die annually.

Dublin seems to have an undue proportion of the poorest class. A striking proof of the poverty of a large proportion of the inhabitants of Dublin is shown by the very large proportion of deaths—nearly one-half—of the population that occur in charitable institutions. That 37 out of every 100 families reside each in one room is another proof of poverty.

That some progress in lowering the high death rate of Dublin has been made is shown by the following figures. Mean annual death rate in decade, ended in 1907, 26.4, rate in 1908, 23.

In comparing Dublin with London, Belfast, and other cities, it is too often the case that it is only the city itself, minus its suburbs, that is compared with cities which, like Belfast, practically include their suburbs.

Outbreak of Typhoid Fever Caused by Infected Milk.

On Monday, the 28th Sept., 1908, I received six notifications of typhoid fever from Clontarf. Two were sent from Dr. M. S. McIntosh, and referred to a female, aged 20, residing in Hollybrook Road, and a girl, 4 years old, living at Belvoir Terrace, Dollymount. From Dr. John O'Donoghue, District Medical Officer of Health, came four notifications of typhoid fever, as follows :—A girl, 5 years old, in Castle Avenue; an adult female, in Haddon Road; a girl, 3 years of age, in Victoria Road; and a girl, 5 years old, in Haddon Road. Dr. O'Donoghue observed that these cases occurred in houses supplied with milk from the same dairy.

On the 30th September a case of typhoid fever in Howth Road, an adult male, was notified by Dr. W. R. Lemon. On October 1st five cases of the disease in Castle Avenue, Haddon Road, St. Joseph's Square, and St. Lawrence Road were notified by Doctors O'Donoghue, McIntosh, and Hopkins. On inquiry I found that the houses in which these patients were located were supplied with milk from the same dairy as that from which milk was procured by the occupants of the houses from which the first six notifications were received. The following shows the dates on which the first few notifications were received :—

Date.	No. of Cases.
Monday, 28th. September, 1908 ...	6
Tuesday, 29th. September, 1908 ...	nil
Wednesday, 30th. September, 1908	1
Thursday, 1st. October, 1908 ...	5

The dairy, which I shall now and further on refer to as the " suspected dairy," supplied a very large number of houses in Clontarf. It might at first appear as if the supply of milk to, and the appearance of typhoid fever in, the same house were only coincidences; but as case after case was notified, and that, on inquiry, in every instance it was found that the patient's dwelling was supplied with milk from this dairy, the inference that the milk was infected became irresistible.

EXAMINATION OF THE DAIRY.

On the day the first notifications were received a sanitary inspector visited the dairy, and reported that he found no one ill in it, and nothing on

view that would account for the infection of the milk. Next day Mr. Andrew Watson, M.R.C.V.S., inspected the dairy, and examined the cows. His report was that the dairy and its utensils were very clean, and that the cows were free from disease, and were in a cleanly condition. Four samples of the milk from the dairy were obtained—one from the dairy and the others from customers—and all were found to be free from typhoid bacilli. These micro-organisms have rarely been detected in cases where milk was undoubtedly the vehicle of enteric fever poison.

On Wednesday I made a prolonged inspection of the dairy. The owner was present, also his wife, son and three daughters. None of them exhibited any sign of recent illness, and all declared that they had not suffered from sickness for a long time. The workmen engaged in the milking of the cows, and distributing the milk, were a man and his son, another man, and the proprietor's son. The first three named were chiefly engaged in milking cows out at pasture. The three workmen whom I examined and interrogated several times protested that they never had typhoid fever, and had not recently been ill.

On the 3rd. of October I received a certificate from Dr. Sheppard, stating that he had examined all the persons connected with the dairy, and found that they were free from disease. As medical attendant of the family he could say that none of them had typhoid fever.

The cows of the dairy numbered 58; 13 of them were within the curtilage of the dairy, some were in a field near the upper part of Vernon Avenue, and the rest were on pastures abutting on Mount Prospect Road. The family of the owners of the dairy resided in one of a terrace of eight houses, at the rere of which there were two large yards communicating with each other. A door gave entrance to the basement storey of the dwelling, and in this basement storey there was a small apartment in which milk was stored. People came to this door for milk, and, so far as I can learn, generally handed in a vessel for the milk. Some of the milk was sent out by hand, and not in a cart, to customers residing near the dairy. At the rere of the dwelling there was another small milk store. It was situated at a distance of a few feet from a w.c. On pointing out the closeness of the store and the w.c. it was intimated that the w.c. would be removed if required.

On Thursday, 1st. October, I had an investigation made as to the drains of the dairy and adjacent houses, and the sewer into which their contents were discharged. In a lane there is a pipe sewer into which the drainage from the dairy and that of several houses close to it are discharged. All the houses have intercepting traps on their cross drains; but the drain from the dairy had neither an interceptor nor a ventilator. There was, moreover, a defect in the water closet. Notices to remedy these serious defects were at once served, and immediately complied with.

The drainage in the lane referred to passed into the sewer of another lane, and from thence into a main sewer in Vernon Avenue. Of course the want of an interceptor and ventilator was very serious in the case of a drain from a dairy; but even so I was much more inclined to regard the carriers of the milk as the carriers of the micro-organisms of typhoid fever, and the means of spreading the disease. This view was founded chiefly on the fact that most of the milk was distributed from the fields and not from the dairy.

THE PASTURES.

I visited the pastures on which by far the greater number of the cows were kept. The field at Mount Prospect Road had neither pond nor ditch on it. There was a supply of Vartry pipe water. A huge vessel, full of water, was under the tap. At the bottom of the vessel there were some leaves, which had been blown into it. I took a sample of the water, and examined it, and found nothing deleterious in it. One imperial gallon of this water contained :—

Total Solid Matters	4.200
Including :—	
Albuminoid Ammonia	0.014
Saline Ammonia	0.010
Nitrous Acid	none
Nitric Acid	trace
Chlorine	0.890
Sulphuric Acid	0.7206
Equal to Calcium Sulphate ...	1.0000

Phosphoric Acid	none
Hardness	2°
Colour, looked at through a tube two feet long	light yellow
Odour at 100° F.	none
Suspended Particles ...	numerous
Turbidity	much
Sediment	slight

Microscopic Examination :—A rather large number of micro-organisms present, but none of an objectionable character, such as the coli group, were detected in it.

The slight variation from normal Vartry water was due to the leaves present in the vessel.

At the field near Vernon Avenue there was also a supply of Vartry water. There was a ditch there which contained a little muddy liquid, but the sides of the ditch exhibited no foot-prints of man or beast. It is incredible that any of the workmen would use, as was suggested, this scanty and filthy liquid instead of the pure Vartry water at hand.

The three workmen were on the pastures at one of my visits. They would not admit having been ill recently. They stated that they brought the milk from the fields direct to the houses they supplied, and not at first to the dairy. The means of straining the milk were on the pastures.

WHAT CAUSED THE OUTBREAK.

I was strongly, at this time, of opinion that in some way, either by having had an attack of typhoid fever, or by being in contact with a case

of the disease, one or more of the milkers were carriers of the micro-organisms of the fever. I was rather strengthened in this view by the fact that very few of the earlier cases of the malady occurred amongst the people who got the milk direct from the dairy, or supplied to them by hand. It was the houses supplied direct from the fields that at first, at least, were infected.

From the 28th. September to the 5th. October there were 42 notifications of typhoid fever, and of these only one was in a house not supplied from a cart. No doubt, by far the larger proportion of the milk came from the fields; but, dealing with the whole epidemic, the milk from the dairy appeared to do less mischief than that from the fields.

MEANS TAKEN TO PREVENT THE SPREAD OF THE EPIDEMIC.

The milk from the dairy and specimens supplied by it to houses in Clontarf were examined bacteriologically, and no micro-organisms characteristic of typhoid fever were found in them. I believe it is rarely, if ever, that in the numerous outbreaks of typhoid fever, attributed to infected milk, the *bacilli typhosi* have been detected in the milk.

By far the larger number of the patients were treated at home. This led to large quantities of their excretions passing into the sewers. Both liquid and solid excretions contained myriads of the infective micro-organisms which cause the disease. I, therefore, thought it would be useful to put disinfectants into the sewers, and that the best way to do so would be to pour the disinfectants into the

water closets of the houses, so that the cross drains would also be disinfected. 805 houses were visited and strong disinfecting solution poured into the water closets. Some disinfecting solution was also applied to the foreshore laid bare during the recess of the tide.

On the 1st October, I sent the following letter to all the morning and evening newspapers:—

"TYPHOID FEVER IN CLONTARF.

"Sir,—Typhoid fever is rather prevalent in Dublin at present, and especially in Clontarf. As a precaution, I would strongly urge upon the residents in that district to see that the drains of their houses are in good order. The use of disinfectants in the drains is desirable. It would be well to boil the milk used, as this liquid is sometimes the vehicle of the poison of typhoid fever.—I am, Sir, yours faithfully,

"CHARLES A. CAMERON,
"Medical Officer of Health.

"Public Health Office,
"Dublin, 1st October, 1908."

At the same time, two Sanitary Officers were sent round all the houses in the infected district to warn the occupants and to ascertain the names of the persons who supplied them with milk. I have the strongest reason to believe that my advice to boil the milk was generally adopted, and I have no doubt was the means of saving many persons from contracting the disease. It must, however, be borne in mind that the virus of typhoid fever

takes from 10 to 14 days, or even longer, to develop the disease, and even after development, the first symptoms are not always serious, and do not attract much attention. There are by no means few instances in which the infected person does not take to his bed but goes about his business. This is what is termed perambulatory typhoid fever. Before any warning could be given, the disease germs were multiplying in the system of scores of people in Clontarf.

I requested the proprietor of the dairy to remove for a while the persons who were engaged in milking the cows and distributing the milk, but the request was refused. I procured specimens of the urine of the three workmen, and submitted them to Professor McWeeney for bacteriological examination. He reported that the result was negative. I then verbally, and, subsequently, in writing, suggested to the proprietor of the dairy that he should get an eminent bacteriologist, Professor McWeeney, for example, to examine all the persons connected with the dairy, in order to determine were any of them carriers of the bacilli of enteric fever. My idea was that their excretions should be examined, and the Widal's blood test employed. Professor McWeeney's services were obtained, as were also those of Professor Mettam, Principal of the Veterinary College. Although repeatedly asked for, I have not been informed as to the results of those gentlemen's investigations.

It is well established that convalescents from enteric fever, and even persons long completely recovered from that malady, continue to discharge

in their excretions the micro-organisms which cause the disease. Cases are on record showing that even after several years have elapsed, the Widal reaction and the bacteriological examination of the fæces indicate the presence of the bacilli. It is rather significant that after the experiments of Dr. McWeeney and of Professor Mettam had been concluded, one of the three men who were milkers, and two of them distributors of the milk, was taken from dairy work and transferred to other employment.

VARIOUS CAUSES ASSIGNED FOR THE FEVER OUTBREAK.

The owner of the suspected dairy regarded himself as a much-injured individual, and could not believe that his milk caused the outbreak of fever. Some persons assigned to the emanations from the Fairview sloblands, the cause of the epidemic. These sloblands are in course of reclamation by the deposition thereon of street sweepings and other refuse of unobjectionable nature. Usually there is no unpleasant odour noticeable from the refuse; but in September large quantities of vegetable refuse from the City markets were deposited on the sloblands, and the weather being warm at the time, the vegetable matter soon began to decompose and produced a bad odour. It is, however, clear that the emanations from the sloblands had no connection whatever with the typhoid outbreak. In Fairview itself there was not one case of typhoid fever. No man working on the sloblands contracted the disease. With the exception of the

upper part of Howth Road, all the cases occurred on the East side of the great embankment of the Great Northern Railway, and remote from Fairview.

The roadway along the Clontarf shore is being opened up in order to lay the sewer into which the sewers of Clontarf are to discharge their contents. This new sewer is to be brought into communication with the main drainage system of the City. It was alleged that the soil dug up in making the excavations for the sewer might have given off noxious exhalations. The soil was under the roadway, and it was inconceivable why it could possibly contain the characteristic bacilli which cause typhoid fever. I examined this soil and found nothing objectionable in it.

It was alleged that the Corporation opened a sewer close to the suspected dairy, and kept it open for several days, and that from that sewer noxious exhalations proceeded. It was also alleged that "black stuff" was taken out of the sewer and placed on the surface of the land. Mr. Brady, who acted as solicitor for the owner of the dairy, said to me that if the milk was really infected it must have been by the exhalations from this sewer or stuff out of it. Reference to this sewer and black stuff will be found further on.

PROGRESS OF THE EPIDEMIC UP TO 2ND NOVEMBER, 1907.

The area affected by the epidemic contained 748 houses; of these 193 were supplied with milk from one dairy, and 555 from 28 other dairies. 82

of the houses were invaded by typhoid fever, and 127 of the inmates became victims of the disease. 79 of the 82 houses were supplied with milk from the suspected dairy—that which supplied 193 of the houses. The remaining three houses had a supply of milk from three other sources. One of these houses —a cottage—was occupied by a charwoman, and she developed typhoid fever. She, however, worked and obtained food in one of the 79 houses in which there were cases of typhoid. Another of the three houses got milk in the morning from a dairy which was not the suspected one. On close enquiry, the lady who owned the house stated that she also often got milk in the evening from the suspected dairy. The third house obtained milk from a dairy which was not the suspected one; but it has been proved to demonstration that on several occasions the owner of this dairy procured milk from the suspected dairy, and some of it was supplied to the house last referred to. There is the clearest evidence that the 127 persons affected with the disease used milk supplied from the suspected dairy. This was the state of things up to the 2nd day of November, 1908.

If the outbreak of typhoid fever was not due to infected milk, what would be the chances that all the cases would occur in the 193 houses supplied with milk from the suspected dairy, out of the 748 houses? Not one in many millions. In 1878 and early part of 1879, I investigated an outbreak of typhoid fever in Dublin, in which there were 67 cases and 6 deaths. Beside the evidence of fever in the dairy, I came to the conclusion that the milk

was infected by employing the theory of probabilities. The suspected milk was supplied by a dairy, which I designated x, to 25 of the 120 houses in Fitzwilliam Square, Raglan Road and Elgin Road. Twenty-five other dairies supplied the remaining 95 houses. Cases of typhoid fever occurred in 14 of the houses. Now, assuming that milk had nothing to do with the outbreak, what were the chances that the milk from x dairy would supply 1 of the 14 houses, or, say, what would be the chance of one case of the disease occurring in one of x houses? The probability of

$$\text{One case} = \frac{25}{120} \quad (1)$$

$$,, \quad \text{A second case} = \frac{24}{119} \quad (2)$$

The probability of one event is $1 : 4\frac{4}{5}$.
The probability of *both* events $1 : 23\frac{1}{5}$.

Worked out in this way, I found that the probability, or chance of x milk supplying all the 14 houses was one chance in 150,180,296,639 chances. The chance that the 127 cases of fever in Clontarf should all occur in the houses supplied by the suspected milk is even much less than that in the x milk outbreak.

Mr. James Brady, Solicitor for the owner of the suspected dairy, made an application to the Local Government Board to hold a sworn enquiry into the cause of the epidemic, but the Board declined the application. Mr. Brady subsequently applied to the King's Bench for a mandamus compelling

the Local Government Board to hold the enquiry, but he withdrew the application. It is rather significant that the withdrawal was made after Dr. McWeeney's examination had been carried out.

LEGAL ACTION.

When satisfied that the outbreak appeared to be due to infected milk, the question arose, how should action be taken to restrain the sale of it? If a case of fever had been found in the dairy, or that any p rson connected with it was, or had been, recently ill, the Public Health Acts and the Dairies and Cowsheds Orders could be employed for the purpose. In the absence of any knowledge of disease in connection with anyone in the dairy, I consulted the Law Agent of the Corporation on the subject. He was of opinion that in the existing state of the law, no legal action could be taken. The Assistant Law Agent was of the same opinion.

Some time after the expression of the Law Agent's opinion I received the following letter from the Local Government Board :—

LOCAL GOVERNMENT BOARD,
DUBLIN, *6th October*, 1908.

No. 55,017 : 1908.
Dublin County Borough.

SIR,

I am directed by the Local Government Board for Ireland to acknowledge the receipt of your letter of yesterday's date, relative to an outbreak of typhoid fever at Clontarf, and I am to state that, having regard to the observation in your letter that "in all the cases the milk used by the patients was supplied from the same dairy," the Board presume that you have taken action under Section 4 of the Infectious Disease (Prevention) Act, 1890.

I am, at the same time, to draw your attention to the provisions of Section 53 of the Public Health Acts Amendment Act, 1907, and of Article 21 of the Dairies, Cowsheds and Milkshops (Ireland) Order of 1908.

I am, Sir,
Your obedient servant,
A. R. BARLAS, *Secretary.*

Sir C. A. Cameron, C.B.,
Medical Superintendent Officer of Health,
Municipal Buildings, Dublin.

I informed the Local Government Board that the Corporation law officers were of opinion no legal action could be taken in the matter.

Subsequently the Local Government Board expressed an opinion that the Public Health Committee should consult senior Counsel on the subject. This was accordingly done, and the case for Counsel's opinion was stated by Mr. Rice, the Corporation Law Adviser, as follows :—

Counsel will please advise: —

(1) Has the Corporation or the Public Health Committee power under the Infectious Disease (Prevention) Act, 1890, or otherwise to interfere with the sale of milk by the owner of the suspected dairy?

(2) In case the Corporation makes such an Order as that referred to in Sec. 4 of the Act in question, would it be a good order under the circumstances?

See opinion below.

(3) If such an order is made and is afterwards held to be *ultra vires*, would the dairy owner have a cause of action against the Corporation for making the order, or against the individual members who acted in the matter?

(4) In view of the fact that there was no direct evidence to show that the milk of this dairy caused and is causing the spread of typhoid in the district, can the Corporation take any step to compel the owner to discontinue the supply of milk in the district of the City of Dublin?

And Counsel's general advise is requested.

IGNATIUS JNO. RICE,
City Hall, Dublin,
October 21st, 1908.

Mr. Ignatius O'Brien, K.C., to whom this case was given, gave the following opinion :—

The 4th Section of the Act of 1890 is highly penal, and must be construed strictly. It is manifest, on careful examination, that it contemplated a condition of things where it could be clearly shown either that the milk supplied from a dairy was itself polluted, or while under the control of the dairyman was liable to an ascertained cause of infection. This is shown clearly to my mind by the provision towards the end of the section that the order made by a Local Authority must be withdrawn if it is established that the milk supply has been changed, or that the cause of infection has been removed. It might be suggested that the general nature of the words, "Changing milk supply," shows that the section was intended to cover a case where it was impossible to prove affirmatively that the milk itself was polluted; but this, in my judgment, is not the true construction of the section. It is clear to my mind that the inspection which is to take place under the first part of the question must disclose some physical fact, which can be pointed to either as showing the existence of infected milk, or such handling of the milk as would be liable to produce infection. I do not mean handling within the dairy itself; that it might be so but for the provision as to removing the cause of infection. I have enquired what the dairy in the present case is, and I am informed that so far as registration is concerned it is only the dairy at No. 6 Vernon Avenue. Sir Charles Cameron's report is perfectly clear that he cannot trace any cause of infection from milk supplied at 6 Vernon Avenue which would justify him in saying that the

fault lies there; on the contrary, he says that all the cases of infection are traceable to the supply from certain fields which do not appear to form part of the registered premises. These fields may constitute a dairy within the meaning of the Act, but it is clear that any order which could be made must be confined to these fields. So far as the dairy proper goes, I see no ground on which any order could be justified. Treating the fields as being the dairy, it becomes at once clear that the application of the section to the facts of the present case is a matter of some difficulty. I doubt if it is adequate at all to deal with the position where the whole matter rests on a scientific presumption, not based upon any ascertained fact, but a probability. The section, in my opinion, requires something more than this. It requires affirmative evidence of infection or cause of infection to the milk. I do not think the evidence which the Medical Officer of Health is to possess must be such technical evidence as would be required, let us say, in an action for damages for supplying infected milk. The Medical Officer of Health is not a lawyer, but a scientific man, and he is entitled and bound to place before his Board such facts as induce him to come to the conclusion that the section should be put in force; but when the dairyman comes to show cause against the order, the Local Authority is, in my opinion, bound to consider all the facts quite irrespective of the Medical Officer. How can it make an order unless it finds the existence of a state of facts in respect of which the dairyman can say afterwards, "I have removed the cause of infection," or "I have changed the milk supply." It is difficult to see what change can be ordered in the supply of milk, when the milk supplied is shown to be unpolluted so far as the source is concerned. Suppose all the cows were removed and new cows brought in, the order, if made, would have to be discharged because the milk supply had been changed, while the source of infection, whatever it would be, remained; and, on the other hand, you can't remove a source of infection which no man can put his finger on. Therefore, it appears to me that, if the Corporation comes to deal with this case in its quasi-judicial capacity, there is no evidence on which it ought to act, and, owing to the manner in which the section is drafted, any evidence on which they could act. If I be right that there is no evidence in the latter sense, their order could be quashed. If, however, I be wrong in this, and they have acted on what is legally

evidence, then, of course, the order would not be quashed on certiorari. I only express my own opinion on a matter of great doubt.

A recent case which was decided by the English Courts explains my meaning. A man while being shaved received in the barber's shop a cut from the razor which set up disease. Evidence was admitted that a number of other people had received similar cuts, and that the same disease resulted; but the evidence was only held to be legal, because it was first established that it was in itself a negligent act not to disinfect razors, and that other instances were admissible to show continuous disregard of this sanitary precaution. But if it had been established that there was a habitual regard for sanitary precautions, this evidence would hardly be admissible.

I believe the section has been practically a dead letter, as it is cumbersome, though, of course, the jurisdiction to set it in motion undoubtedly exists. Legislative interference with the law is essential if a case like the present is to be dealt with.

2. I have explained my position with regard to this above. I think it would be a bad order, but it is quite possible that a Court might hold that legal evidence was not contemplated at all; but in this view I could not agree until a Court decides it.

3. This question does not appear to me to arise, being based entirely upon the assumption that the Corporation act in a manner that, to my mind, would not be legally justifiable. The position of the Corporation would be analogous to that of Justices.

4. I am not aware of any special powers except these in the 4th Section.

IGNATIUS J. O'BRIEN,
6 Lower Merrion Street,
Dublin, 22/10/'08.

The Local Government Board subsequently suggested that it would be desirable to obtain a further opinion on the subject, and forwarded one of Mr. Vanston's, K.C., the Law Adviser.

Mr. Rice sent me the following :—

LAW AGENT'S OFFICE, CITY HALL,
DUBLIN, *2nd December*, 1908.

ENCLOSURES.

Sir Charles Cameron, C.B.,
Chief Executive Medical Officer of Health.

DEAR SIR CHARLES,

INFECTIOUS DISEASES PREVENTION ACT.

I enclose you a letter received from Surgeon-Col. Edgar Flinn, with a copy of the opinion of Doctor Vanston on this matter. I also send you a copy of a letter received by me from Mr. Ignatius O'Brien, K.C., after reading Dr. Vanston's opinion.

I do not see how, under the circumstances, the Corporation would be justified in expending more money in taking legal opinion on the subject, as, after all, if the Local Government Board think a further legal opinion is necessary, it ought to take it on its own part, the Corporation being, I am sure, satisfied with the opinion which it has received and paid for.

IGNATIUS JNO. RICE.

10 LANSDOWNE ROAD,
DUBLIN, *November 16th*, 1908.

DEAR MR. RICE,

With reference to my interview with you I enclose you copy of Dr. Vanston's opinion.

Although with the abatement of the outbreak of enteric fever at Clontarf, the circumstances of the case are now of less immediate practical interest, it is, however, most essential that the powers of the Corporation should be clearly defined with a view to dealing with similar outbreaks in future.

In view of the great importance of the question, would it not be very desirable and necessary to obtain further advice on the matter?

Yours faithfully,

D. EDGAR FLINN.

No. 59,605 : 1908.
Dublin County Borough.

COPY OF DR. VANSTON'S OPINION,
Dated 9th November, 1908.

The case is one of much difficulty and doubt, but my own opinion is that a court could, under the terms of the section, and would in the circumstances, construe the section so as to bring the case within it, having regard especially to the paramount object of the section, and of the entire Act being the preservation of the health of the community by preventing the spread of disease. I do not agree with Counsel that the section must necessarily be construed in the very strict way in which he looks at it. It is entirely remedial as regards the public, though penal as regards the dairyman, and should be construed with reference to the true meaning and real intention of the legislation, which was to prevent the spread of disease.

COPY.

Law Library, Four Courts,
Dublin 26*th November*, 1908.

Dear Mr. Rice,

I have read the opinion of Doctor Vanston, K.C., which you have sent me, with reference to the question of dairies and enquiries by the Corporation. I cannot concur in his view or alter my own, and I may add that, quite apart from the merely technical grounds on which I based my opinion, I think the section is a very unworkable one.

Yours faithfully,
IGNATIUS J. O'BRIEN.

Ignatius Jno. Rice, Esq.,
Law Agent,
Dublin Corporation.

The Public Health Committee took no further action in the matter. It is clear that further legislation is required in reference to disease caused by infected milk.

A CASE OF FEVER IN ST. JOSEPH'S SQUARE.

Surgeon-Colonel Flinn, Medical Inspector of the Local Government Board, from almost the very beginning of the outbreak, spent a considerable amount of time in the investigation of it. In conversation with a medical man, who had notified several cases of typhoid fever, the latter mentioned that he had attended a sick child some weeks before in a house in St. Joseph's Square. Surgeon-Colonel Flinn called at the house and saw the sick child, and in conversation with its mother the latter informed him that she had an attack of typhoid fever, beginning early in August and ending in the early part of September of the present year. My attention having been drawn to this circumstance, and knowing that the case had not been notified, I visited the woman and questioned her. She said that the doctor told her that she had typhoid fever. She was attended to during her illness by her two sisters-in-law. I visited them, and the elder of them said that she did not hear the doctor state the nature of her sister's illness, but her sister told her that the doctor had informed her that she had typhoid fever. I wrote to the doctor for an explanation why he had not notified the case, and in reply he stated that he had a "complete answer" to make. The question of prosecuting him under the provisions of the Infectious Diseases Notification Act came before the Public Health Committee. The doctor attended before the Committee, and his explanation was that he was not certain that the case was really

enteric fever, as the most characteristic symptoms, such as enlargement of the spleen, diarrhœa, and continuous high temperature, were absent. The Committee did not decide to prosecute him. On a subsequent occasion, and in reference to a communication from the Local Government Board, the Committee again discussed the question of a prosecution in this case, and on a division decided not to prosecute.

The discovery that what might, at least, have been a case of enteric fever in St. Joseph's Square before the outbreak of the disease, was important from the circumstance that the house in which it occurred was separated from the suspected dairy only by a wall. During the patient's illness milk was sent for three times daily, from the patient's house to the suspected dairy. I interrogated the two girls who went for the milk, and they stated they merely went to the door of the basement storey and handed in a jug. Was it possible that this jug contaminated the milk to such an extent as to account for the great and widespread outbreak of typhoid fever? It might be possible, but it is extremely unlikely. Could the micro-organisms of the disease have been wafted over the wall of the rere of No. 5 St. Joseph's Square into the milk vessels of the dairy? This would be still more unlikely. Besides, the yard in which the milk vessels were washed was not next to the rere of No. 5 St. Joseph's Square. If the epidemic arose out of the case of fever in No. 5 St. Joseph's Square,

sewage emanations seem to be the most likely vehicle of the infecting bacteria. During August the discharges from the patient passed down the sewer which extended from the square to Vernon Avenue. The sewer was an old-fashioned one, made of stone. At a right angle from the sewer, a combined drain extended to the dairy premises. This drain ascending from the sewer, the air of the latter might also ascend, and, from the defective condition of the drainage arrangements in the dairy, mentioned at page 52, might infect the milk in it.

It is alleged that in the month of August, 1908, the sewer from St. Joseph's Square was opened near its junction with the drain from the rere of Vernon Terrace, and that a quantity of "black stuff" was taken out of the sewer and placed on the surface of the lane, where it remained, as alleged, for three or four days. If any portion of this "black stuff," which came from a sewer which conveyed the dejections of a typhoid fever patient, dried and was carried by the wind into the dairy, the milk in the dairy might become contaminated. As the "black stuff" was not allowed to remain long in the lane, and as the infection of the milk must have gone on for a good many days, the interval between the first and last case, undoubtedly due to infected milk, being at least five weeks.

For reasons stated further on I am of opinion that this case of fever, supposing it to have been typhoid fever, was not the cause of the epidemic.

CAN MICRO-ORGANISMS PASS INTO THE AIR FROM SEWAGE?

Numerous experiments have been made to determine the chemical composition of sewer air and the nature and number of the micro-organisms in it. Levy and Miguel found, in 1891, that the sewer air in Paris contained only about half the number of micro-organisms present in the over-ground air. Carnelly and Haldane found much smaller numbers of bacteria in the sewers of Westminster, Bristol and Dundee than were present in fresh air, and they believed that the bacteria in the sewers came into them from the outer air. In reports on the air of sewers, made in 1892 and 1893, by J. Parry-Laws, it was stated that (1) the number of micro-organisms in sewer air was smaller than in fresh air; (2) the kinds of micro-organisms in sewer air are the same as those of fresh air; (3) moderate splashing does not affect the nature of the bacterial contents, even within four feet of the disturbance; (4) stagnant and decomposing sewage does not influence the nature of sewer air organisms. The results of these investigations would seem to show that pathogenic micro-organisms could not escape from liquids; therefore, that the emanations from undisturbed sewage did not include bacteria, and that even when agitated, the organisms were not detected within four feet from the point of disturbance. If these conclusions were correct, it is difficult to account for the fact that emanations from sewers have many a time been proved to have caused disease. It is common knowledge that defective drains permitting the escape of gases

into dwellings often cause disease. If the dangerous microbes admittedly occasionally present in sewage cannot escape from the liquid, drains untrapped, unventilated and otherwise defective cannot be regarded as a means of spreading enteric fever. I never could persuade myself that bacteria could not escape from liquids. In some experiments which I made some years ago the contrary seemed to me to be proved. I placed dejecta from a typhoid patient in a large glass vessel, communicating through a wide glass tube with another vessel containing milk. The excreta was undergoing decomposition, and in a short time the milk was found to contain *bacilli typhosi.* The air bubbles formed in the vessel by the decomposition of the excreta, carried over into the milk-vessel some of the typhoid bacteria. The vessels were so arranged that air currents could pass through both.

In 1907, Major Horrocks, R.A.M.C., made some interesting experiments, which proved that, under certain conditions, bacteria may escape from sewage. He found that liquids placed in a deep jar gave off bubbles, but no bacteria from them reached to a height of four inches—at least no bacteria were received on prepared plates at that distance from the liquids. When the bubble-producing liquid was placed in a trap connected with a vertical pipe, permitting of an air current, then bacteria were detected on plates nine feet above the liquid. Other experiments on a larger scale showed that bubbles rising through stagnant water may eject bacteria, which would be carried off by the air currents passing over the liquid.

Dr. F. W. Andrewes, who was associated with Mr. Parry-Laws in his work on sewer air, was unable to affirm that bacteria escaped from sewage; but his own later experiments, as well as those of Horrocks, have led him to change his opinion. Major Horrocks has shown that by the splashing of sewage against the upper part of the drain or sewer, matter may be deposited there which, after drying, would be carried by air currents. Such dried matter might contain pathogenic micro-organisms. Dr. Andrewes writes:—"It may be taken as conclusively proved that under certain circumstances, at all events, sewage gives up its bacteria to sewer and drain air. Such bacteria may form but a small proportion of those present in sewer air; this is likely, as they would not otherwise have escaped detection by previous observers. But it is probable that the circumstances under which sewage gives up its bacteria are common and ordinary circumstances in sewer and drain construction."*

Amongst many interesting experiments recorded, I may mention the following striking one. Prepared plates to catch bacteria were placed on the top of a 6-inch ventilating pipe, connected with a w.c. in the basement. An emulsion rich in a well-known microbe (*Bacterium Prodigiosum*), was placed in the w.c. and the closet flushed. At the end of 48 hours the prepared plates, which had been removed from the pipe, and incubated, were found to contain the microbes. In this case the

* Page 204 of 36th Annual Report of the Local Government Board (England) 1906-7, Supplement containing Report of the Medical Officer for 1906-7, London, 1903.

microbes were brought up to a height of 50 feet from the w.c.

I have described Major Horrocks and Dr. Andrewes' investigations, especially because they illustrate the way in which a case of typhoid fever in Clontarf, referred to further on, was probably caused.

AGES OF THE PATIENTS.

I assume that all the patients, whose cases were notified up to and including the 2nd November, contracted the disease from infected milk. These cases numbered 127. There were 15 cases notified subsequently, extending to the 24th. December. These appear to be, with two or three exceptions, clearly due to antecedent cases of the disease. The total number of cases was 142.

ASCERTAINED AGES OF 137 OF THE PATIENTS.

	Males.	Females.	Total
Under 5 years	8	11	19
5, and under 10 years ...	13	13	26
10, and under 15 years ...	8	10	18
15, and under 20 years ...	6	6	12
20 years and upwards ...	22	40	62
	57	80	137

The ages of 12 of the oldest patients ranged from 40 to 60 years.

CASE MORTALITY OF THE DISEASE.

The usual mortality in typhoid fever cases is one death in 10 cases; but it is sometimes higher and lower than this rate. In a milk-borne epidemic,

which I investigated in Dublin in 1879, and which is recorded in the Corporation Reports, there were 63 cases and six deaths. In the Clontarf epidemic there were, up to the present, only seven deaths.

WAS RAW MILK ALWAYS THE CAUSE OF THE DISEASE?

I interrogated 10 of the 127 patients as to whether or not they drank the milk uncooked; they all replied that it was sometimes unheated. It is, however, unlikely that all the 127 patients drank raw milk; some of them must have only taken it in tea or in puddings. The temperature of tea is not sufficiently high to ensure the destruction of the bacilli of typhoid fever.

HOW DID THE MILK BECOME INFECTED?

It is perfectly clear that the milk supplied from only one of the 29 dairies which dispensed that liquid in Clontarf caused the fever outbreak. It is equally certain that any emanations from the Fairview sloblands, or from the trenches in the roadway made for the purpose of main drainage, had no connection with the outbreak.

I have referred to the possibility of bacilli of typhoid escaping from the sewer leading from St. Joseph's Square, and finding their way into the milk. Admitting that such were the case, it is inexplicable why cases of the disease should have occurred up almost to October. That the milk was extensively infected is shown by the large proportion of the persons who used it contracting the fever. It is inconceivable that the bringing of a jug to the dairy in

the month of August and early in September could have caused a large infection of milk. The drain from the dairy, found at the outbreak of the disease to be defective, was promptly put in order. After the first week in October, the drain could not have allowed emanations from the sewer to pass into the the dairy premises. The usual period of incubation of enteric fever is 8 to 12 days. If the drain was the means of spreading the infection, its effects could not have been continued after the middle of October. There were notified in the two weeks ended on the 23rd. October, 26 cases, which I had no doubt were due to infected milk. The case of fever in No. 5 St. Joseph's Square began in the first week in August, and the patient was convalescent in the first week in September. Supposing that her excretions were the cause of the outbreak it is strange that no cases of typhoid fever occurred until late in September.

Almost from the beginning of the outbreak, I strongly suspected that one or more of the men who milked the cows and distributed the milk were carriers of the typhoid bacilli. That is still my opinion. When my request to supersede these men was refused by the owner of the dairy, I suggested, at first verbally, and, subsequently, in writing, that they should be examined by a bacteriologist. Professor McWeeney's services were obtained, and I am informed that he made the necessary examinations. On speaking to him on the subject he said he could not inform me what the results of his examinations were, as he was obliged to regard them as confidential. Neither the owner of the suspected dairy

nor his solicitor could be induced to give me any information on the subject. The examination was made, I believe, about the 17th of October; and it is a significant fact, that immediately afterwards one of the men, whom I suspected, and who no doubt was examined by Professor McWeeney, was taken from the dairy work, and his place supplied by a fresh man. Soon after this event the epidemic died out, except for a few cases, which were the results of antecedent ones, and were not due to infected milk.

CASES NOT DIRECTLY DUE TO INFECTED MILK.

I am satisfied that none of the cases of typhoid fever in Clontarf, which occurred after the 2nd November, were due to infected milk, but the greater number of them contracted the disease from patients who had drunk the infected milk. On the 11th November two cases were notified—one from "Ainsdale," Haddon Road, and the other from 8 Victoria Terrace. In both houses there had been milk infected cases of typhoid fever which no doubt were the causes of the secondary cases.

On the 12th November, a case in Albert House, Dollymount, was notified. In this house there was a previous case due to infected milk.

On the 24th November, a case was notified from No. 2 Walpole terrace. From the same house a case had been notified on the 28th November. A case was notified from No. 7 Vernon Avenue. As this was a house in which no previous case of

typhoid fever had occurred, I visited the house at once. The patient was a child aged 6 years. His mother informed me that he had not been in any house where there was sickness. There was no reason to suppose that the drainage was in a defective state. On leaving the house I recollected that in the one adjacent there was a typhoid fever patient. On examining the rere of the house, I noticed that the rain-pipe passed directly into the ground instead of delivering the rain over a gully trap. Next day I had the ground opened, when it was discovered that the rain-pipe passed directly and untrapped into the drain, and that there was no interceptor on the drain to prevent currents of air coming into it from the main sewer in Vernon Avenue. Having regard to the experiments of Major Horrocks and Dr. Andrewes, referred to on pages 73 and 74, I came to the conclusion that the bacteria of typhoid fever could have ascended through the untrapped rain-pipe and been wafted by air currents into No. 7 Vernon Avenue. The hopper head of the rain-pipe (or spout) was close to the windows of No. 7. On the 19th December, a second case was notified from the " Cottage " in Vernon Avenue.

On the 28th November, I received a notification that a child in No. 11 St. Joseph's Square had enteric fever. There was no illness previously in the house, but Dr. Sheppard, who attended the child (aged 4), thinks she probably got infected in playing about the square, in which there had been cases of fever. The child's mother subsequently contracted the disease, apparently by nursing the child.

On the 2nd December, a case was notified from "Sunnyside," Vernon Avenue. The milk used by the patient (a boy 6 years old) was taken from cows owned by the family. Dr. Lemon, who attended the patient, thinks that the child might have swallowed the poisonous bacilli from apples which had been stored in a loft to which rats had access. It is well known that rats are the carriers of disease germs, and as the dejections of typhoid fever patients had been largely discharged into Clontarf sewers, some of the infective material might have been carried from the sewers into the loft and transferred to some of the apples.

On the 17th December, a case was reported from 4 St. John's Terrace. The patient, a man aged 60 years, was treated by Dr. Sheppard. He was a long time—at least five weeks—ill, with (as Dr. Sheppard, who attended him, states) the perambulatory form of enteric fever. That is, he did not lie up. He had used milk from the suspected dairy.

On the 21st December, a case was notified from Kenilworth House, Seafield Road. As the patient had not resided in Clontarf for several weeks until three days before his illness, it was clear that the infection had taken place before he came to Clontarf.

On the 16th December, a case was notified from 17 St. Joseph's Square. The patient a girl of 14 years. She had been a servant in a house in Cabra Villas, near which there had been several cases of typhoid fever.

The cases reported on the 26th December I am unable to connect with the infected milk. One of

the patients was a charwoman, and worked in various places in Dublin and suburbs. Both patients were practically squatters in the house, which was in a dilapidated condition.

CASES OF TYPHOID FEVER OUTSIDE CLONTARF ATTRIBUTED TO THE INFECTED MILK.

Three persons who had resided in Clontarf during the outbreak of typhoid fever, but who left the district before being ill, developed the disease a few days after their departure. Their illness occurred so soon after they had left Clontarf that there is no doubt whatever that the incubation of the disease had commenced in Clontarf. They had resided in houses to which milk from the suspected dairy had been supplied, and in which cases of enteric fever had occurred. These three cases raise the total number, directly attributable to the infected milk, to 130.

In conclusion, I have to express my thanks to Dr. O'Donoghue, Medical Officer of Clontarf District, for his early intimation of the fact that several persons who had typhoid fever used milk out of the same dairy, and for much help in connection with the fever outbreak.

CASES OF ENTERIC FEVER NOTIFIED IN THE CITY OF DUBLIN EACH MONTH FROM 1st JANUARY, 1908 TO THE 2nd JANUARY, 1909.

Month of	North Dublin.	South Dublin.	Clontarf and part of Howth.	Drumcondra and Coolock.	Glasnevin and part of Finglas.	Kilmainham.	Total
January	6	11	—	1	1	—	19
February	11	10	1	1	1	3	27
March	7	10	1	3	—	1	22
April	7	4	—	—	—	2	13
May	9	11	—	3	—	1	24
June	8	9	—	1	—	—	18
July	10	7	1	2	—	—	20
August	19	41	—	1	—	1	62
September	16	40	7	—	—	1	57
October	45	40	119	2	1	10	225
November	18	21	7	2	1	4	53
December	18	38	9	—	—	4	69
Total ...	174	242	145	16	4	27	609
Population	131,407	139,391	5,269	11,382	7,534	8,891	303,874

CASES OF TYPHOID—FEVER NOTIFIED FROM CLONTARF.

e of receipt of tification.	ADDRESS.	Sex.	Age.
S.			
28 ...	7 Hollybrook Road	Female ...	20 years
28 ...	8 Belview Terrace, Dollymount ...	Female ...	4 years
28 ...	"Lucerne," Castle Avenue ...	Female ...	5 years
28 ...	"Craigmiller," Haddon Road ...	Female ...	—
28 ...	Haddon Road	Male ...	3 years
28 ...	2 Victoria Road	Female ...	5 years
30 ...	"Lyndale," Howth Road ...	Male ...	Adult
1 ...	"Everton," Castle Avenue ...	Male ...	15 years
1 ...	"St. Raphael's," Haddon Road ...	Female ...	19 years
1 ...	20 St. Joseph's Square, Vernon Av.	Female ...	7 years
1 ...	12 St. Lawrence Road	Female ...	32 years
1 ...	"St. Columb's," Haddon Road ...	Female ...	20 years
2 ...	15 Tramway Terrace	Male ...	22 years
2 ...	5 Tramway Terrace	Female ...	26 years
2 ...	"Ardmore," Victoria Road ...	Male ...	24 years
2 ...	"Tivoli," Castle Avenue ...	Female ...	26 years
2 ...	Do.	Female ...	9 years
2 ...	Do.	Female ...	37 years
2 ...	Do.	Male ...	11 years
2 ...	Warrenpoint	Female ...	28 years?
2 ...	Do.	Female ...	14 years
2 ...	Do.	Female ...	4 years

Date of receipt of Notification.	ADDRESS.	Sex.	Age.
1908.			
Oct. 2 ...	Warrenpoint	Female ...	10 years
,, 2 ...	Leinster Lodge, Strand Road ...	Female ...	28 years
,, 2 ...	"Clareville," Conquer Hill ...	Male ...	23 years
,, 2 ...	"Rathe," 29 Haddon Road ...	Female ...	14 years
,, 2 ...	Do.	Female ...	5 years
,, 3 ...	15 Tramway Terrace	Female ...	5 years
,, 3 ...	9 Haddon Road	Female ...	23 years
,, 3 ...	28 Haddon Road	Male ...	(a boy)
,, 3 ...	7 Hollybrook Road	Female ...	40 years
,, 3 ...	"Greenmount," Howth Road ...	Male ...	18 years
,, 5 ...	15 Tramway Terrace	Female ...	10 years
,, 5 ...	"Tullyallen," Hollybrook Road ...	Female ...	16 years
,, 5 ...	"St. Columb's," Haddon Road ...	Male ...	50 years
,, 5 ...	Do.	Female ...	50 years
,, 5 ...	Do.	Male ...	19 years
,, 5 ...	"St. Edmund's," Strand Road ...	Male ...	18 years
,, 5 ...	"Lyndale," Howth Road ...	Female ...	22 years
,, 5 ...	1 Castle Avenue	Male ...	Adult
,, 5 ...	111 St. Lawrence Road	Female ...	11 years
,, 5 ...	Do.	Female ...	16 years
,, 5 ...	2 Cabra Parade, Seaview Avenue	Male ...	36 years
,, 5 ...	Do.	Female ...	34 years
,, 6 ...	"Craigmillar," Haddon Road ...	Female ...	33 years
,, 6 ...	Do.	Female ...	2 years
,, 6 ...	"Angela Villa," Haddon Road ...	Male ...	15 years
,, 6 ...	Byrne's Hill (14)	Female ...	60 years

ate of receipt of Notification.	ADDRESS.	Sex.	Age.
908.			
t. 6 ...	"Rosetta," Seafield Road ...	Female ...	8 years
, 6 ...	Do.	Male ...	12 years
, 6 ...	"Greenmount," Howth Road ...	Female ...	20 years
, 6 ...	"Strand House," Dollymount ...	Female ...	20 years
, 6 ...	"Greenmount," Howth Road ...	Male ...	23 years
, 6 ...	42 Hollybrook Road	Male ...	16 years
, 6 ...	Do.	Male ...	12 years
, 6 ...	24 Hollybrook Road	Male ...	45 years
, 6 ...	Do.	Female ...	27 years
, 7 ...	8 Victoria Terrace	Female ...	20 years
, 7 ...	Do.	Male ...	18 years
, 7 ...	"Ainsdale," Haddon Road ...	Male ...	9 years
, 8 ...	3 Conquer Hill Road	Male ...	35 years
, 8 ...	"Ormond Villa," Vernon Avenue	Male ...	26 years
, 9 ...	"Ainsdale," Haddon Road ...	Male ...	3 years
, 9 ...	43 Hollybrook Road	Male ...	26 years
, 9 ...	3 Rutland Place, Vernon Avenue...	Female ...	3 years
, 10 ...	97 St. Lawrence Road	Female ...	41 years
, 10 ...	Do.	Female ...	25 years
, 12 ...	2 Warrenpoint	Female ...	12 years
, 12 ...	Do.	Female ...	10 years
, 12 ...	3 Warrenpoint	Male ...	17 years
, 12 ...	Do.	Female ...	11 years
, 12 ...	Do.	Male ...	48 years
, 12 ...	4 Warrenpoint	Female ...	40 years
, 12 ...	Rockville, Victoria Road ..	Male ...	5½ years

Date of receipt of Notification.	ADDRESS.	Sex.	Age.
1908.			
Oct. 12 ...	Clifford House, Haddon Road ...	Male ...	35 years
,, 13 ...	2 Cabra Parade, Seaview Avenue	Female ...	2 years
,, 13 ...	Do.	Male ...	3 years
,, 13 ...	5 Seafield Road	Female ...	7 years
,, 13 ...	Gardener's Cott., Clontarf Castle	Male ...	7½ years
,, 13 ...	Do.	Male ...	2 years
,, 13 ...	"Ardnardeen," Castle Avenue ...	Female ...	30 years
,, 14 ...	2 Warrenpoint	Male ...	15 years
,, 14 ...	117 St. Lawrence Road	Male ...	23 years
,, 14 ...	7 Hollybrook Road	Female ...	7½ years
,, 14 ...	2 Belgrove Villas	Female ...	30 years
,, 14 ...	4 Victoria Terrace	Female ...	12 years
,, 14 ..	"Rathe," Haddon Road ...	Female ...	27 years
,, 14 ...	"Woodside Villa," Vernon Avenue	Female ...	30 years
,, 14 ..	Do.	Female ...	50 years
,, 14 ...	3 St. John's Terrace	Male ...	22 years
,, 14 ...	1 Fortview Terrace	Female ...	49 years
,, 15 ...	Albert House, Albert Terrace (Post Office)	Male ...	3½ years
,, 15 ...	50 St. Lawrence Road	Female ...	18 years
,, 16 ...	2 Walpole Terrace, Castle Av. ...	Male ...	9 years
,, 16 ...	5 Haddon Terrace, Haddon Road	Female ...	35 years
,, 16 ...	"Everton," Castle Avenue ...	Female ...	17 years
,, 16 ...	42 Hollybrook Road	Female ...	24 years
,, 16 ...	Do.	Male ...	8 years
,, 16 ...	33 Hollybrook Road	Female ...	58 years

CHART I.

Number of Deaths from all Causes and from Zymotic Diseases Registered Weekly in 1908. The Upper Curve shows the total Deaths. The Lower Curve shows the Deaths from the principal Zymotic Diseases.

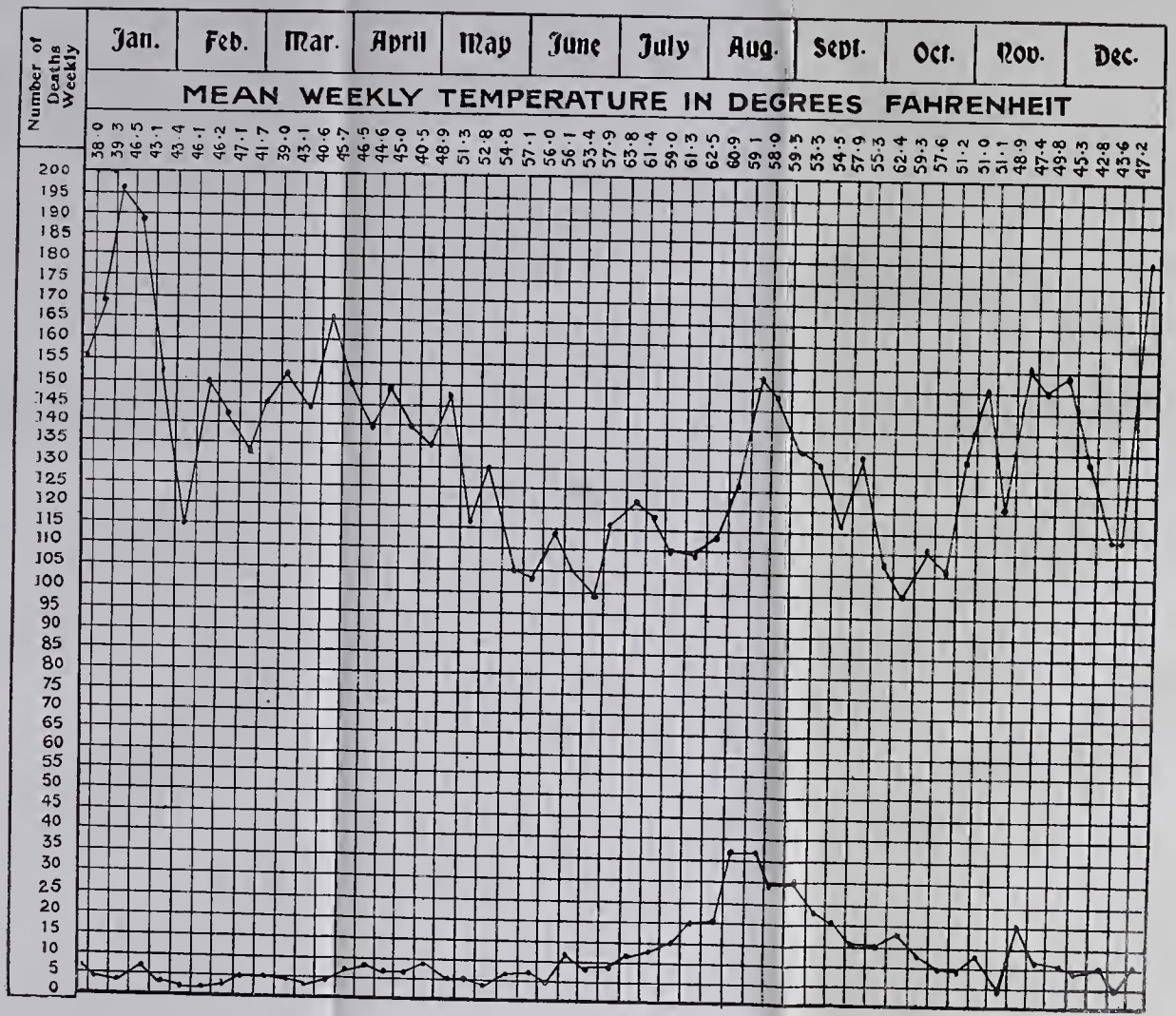


CHART II.

Number of Deaths from each of Four Zymotic Diseases Registered Weekly in 1908.

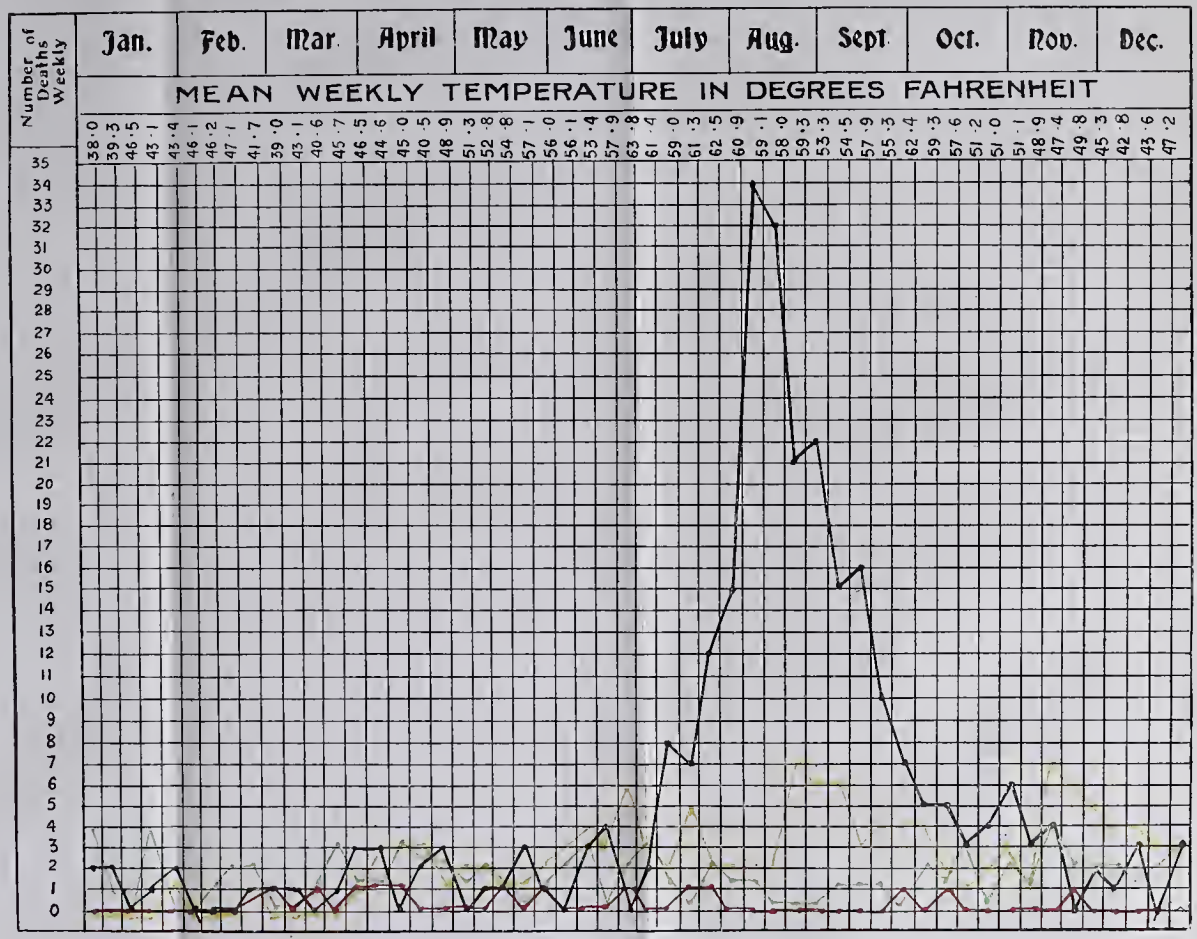


CHART III.

Number of Deaths from each of Three Zymotic Diseases Registered Weekly in 1908.

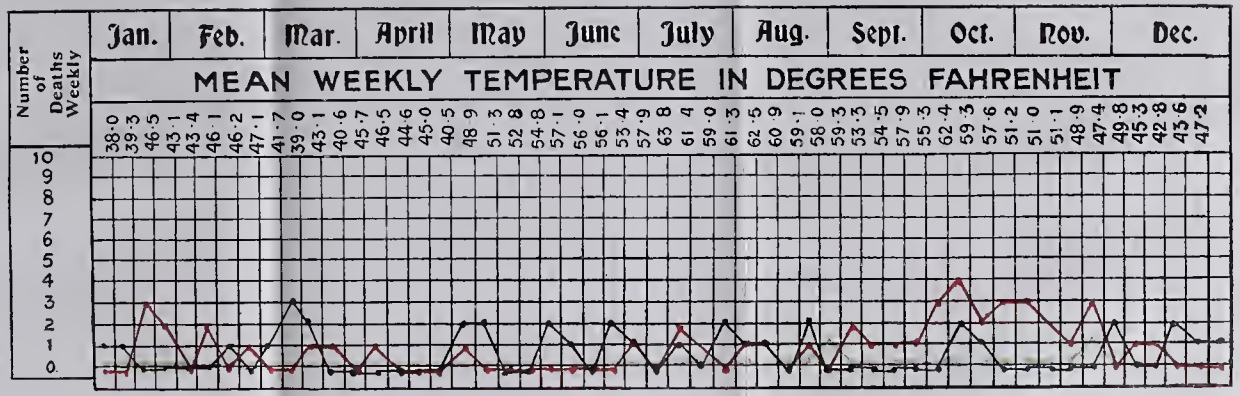


CHART IV.

Chart showing Relation existing between Decrease in Temperature and Increase in Mortality from Diseases of the Respiratory Organs in 1908.

The Black Line gives the Number of Deaths Weekly. The Red Line shows the Mean Weekly Temperature during the Year 1908.

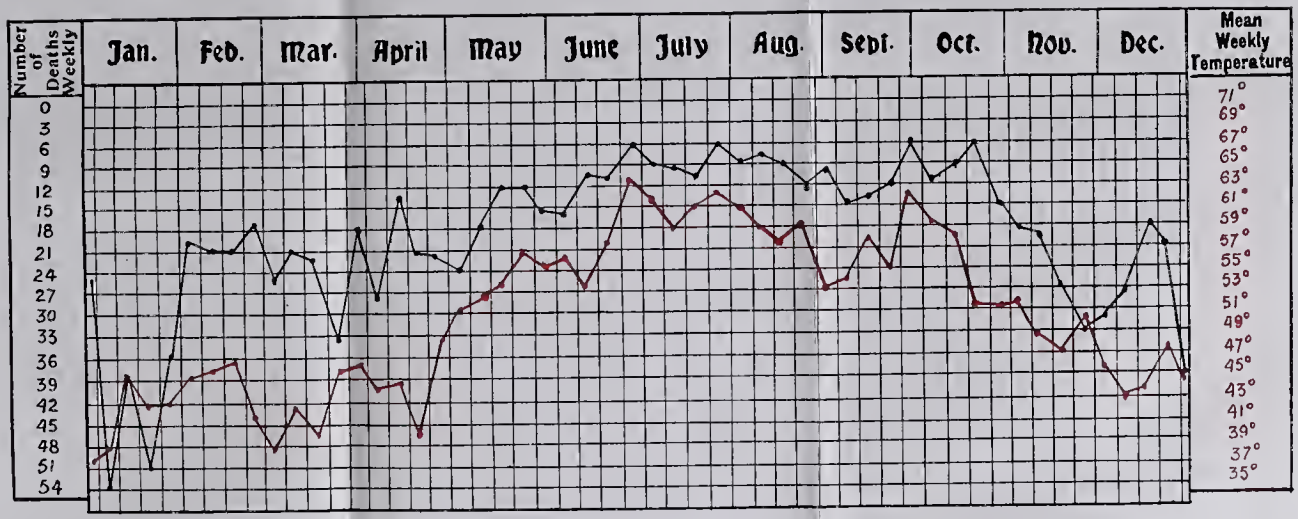
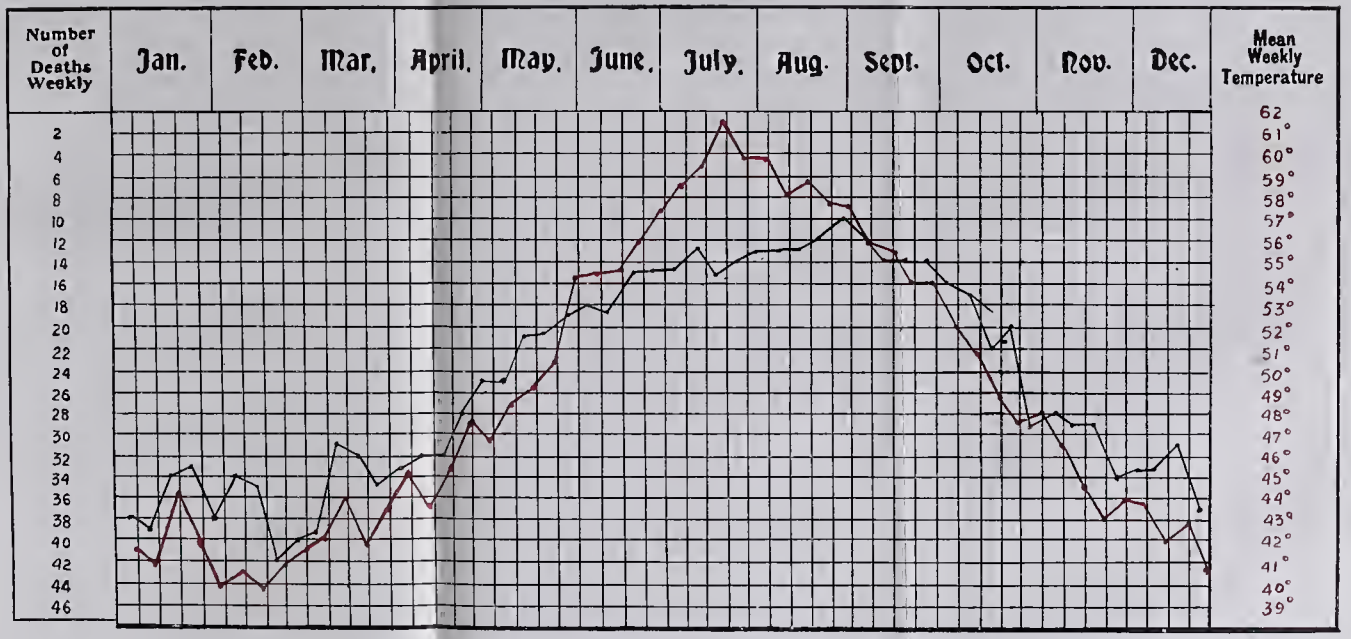


CHART V.

Chart showing Relation existing between Decrease in Temperature and Increase in Mortality from Diseases of the Respiratory Organs during the 10 years ended 1908.

The Black Line shows the average Number of Cases Weekly. The Red Line shows the Mean Weekly Temperature.



STATISTICS OF DEATHS IN THE CITY OF DUBLIN.

The following Table shows the Death-rate within the Municipal, or City, Districts of the Metropolitan Registration Area since Jan., 1899.

Death-rate per 1,000 persons from all causes.

	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	Aver'ge 1899-08
January ...	29·0	43·8	31·3	25·9	29·5	28·9	25·1	22·5	30·9	29·6	29·6
February	32·3	44·5	39·4	28·3	26·2	30·7	25·2	23·0	28·6	23·2	30·1
March ...	33·9	37·3	38·3	27·3	29·7	30·1	26·9	27·0	26·3	26·0	30·2
April ..	33·3	32·1	34·8	27·0	26·6	26·3	23·9	23·5	31·6	24·4	28·3
May ...	27·1	29·3	28·5	24·3	24·7	23·7	21·5	23·7	27·2	21·4	25·1
June ...	24·6	23·4	19·6	20·4	21·9	19·3	18·1	19·3	23·2	17·9	20·7
July ..	27·8	21·9	20·8	20·4	18·5	19·4	20·0	20·8	22·2	19·7	21·1
August ...	36·4	27·1	23·8	22·4	21·0	25·1	21·2	20·7	18·1	23·2	23·9
September	37·6	26·5	21·6	25·9	20·0	22·6	19·7	27·4	19·9	22·2	24·3
October ...	38·6	26·8	21·5	28·4	21·7	22·3	20·1	24·8	21·6	18·9	24·4
November	40·0	26·5	23·7	33·2	24·3	24·5	24·1	27·2	22·3	24·8	27·0
December	43·0	27·8	24·4	30·4	27·7	27·1	21·6	23·8	24·3	24·1	27·4
Year ...	33·6	30·3	26·0	26·16	24·4	24·9	22·3	23·6	24·7	23·0	26·0

Death-rate from Seven principal Zymotic Diseases.

	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	Aver'ge 1899-08
January ...	2·1	2·1	3·3	1·2	2·0	2·1	2·1	0·8	1·6	1·0	1·8
February	1·5	2·3	2·1	0·8	2·0	2·1	1·1	0·5	1·3	0·5	1·4
March ...	1·8	0·9	2·2	1·1	1·8	2·6	1·0	1·1	1·9	0·7	1·5
April ..	1·8	1·4	2·1	1·3	1·5	2·1	0·9	0·9	3·2	1·3	1·6
May ..	1·1	1·2	1·6	1·5	2·0	2·1	0·9	0·6	1·8	0·9	1·3
June ..	1·8	0·9	1·1	1·0	1·3	1·2	0·8	0·7	1·7	1·3	1·1
July ..	4·5	1·2	2·0	2·0	0·8	2·3	2·5	1·6	1·6	2·2	2·0
August ...	11·3	4·8	4·7	4·2	1·7	6·1	3·6	3·8	1·9	5·2	4·7
September	11·9	5·5	3·4	5·6	1·9	3·9	2·0	6·0	2·2	3·8	4·6
October ..	11·7	3·6	2·2	5·5	1·6	2·3	0·8	3·3	2·6	2·1	3·5
November	9·7	2·1	0·6	4·9	1·0	2·6	0·9	2·4	1·1	2·1	2·7
December	4·6	2·3	1·2	3·2	1·8	2·5	1·0	1·6	1·0	1·5	2·0
Year ..	5·3	2·4	2·2	2·7	1·6	2·7	1·5	1·9	1·8	1·8	2·3

TABLE SHOWING NUMBER OF DEATHS FROM VARIOUS DISEASES, and the Ratio of the Deaths, per 1,000 of the Population, in the City of Dublin, in the Year 1908.

NAME OF DISEASES.	Number of Deaths	Rate of Mortality per 1,000 persons living
Zymotic Diseases—		
Smallpox	0	·000
Measles	130	·427
Scarlet Fever	13	·042
Typhus Fever	2	·006
Whooping Cough	75	·246
Diphtheria	35	·112
Pyrexia (origin uncertain)	1	·003
Enteric Fever	47	·154
Diarrhœal Diseases	275	·904
TOTAL	578	1·902
Other General Diseases	612	2·013
Tuberculosis—		
Phthisis	956	3·146
Other forms	475	1·563
TOTAL	1,431	4·709
Cancer, Malignant Disease	279	·918
Pneumonia	542	1·783
Local Diseases—		
Diseases of		
Nervous System	452	1·507
Organs of Special Sense	3	·009
Heart and Blood Vessels	992	3·264
Respiratory System	1,012	3·330
Digestive System	430	1·415
Lymphatic System	7	·023
Urinary System	190	·625
Generative System	11	·036
Accidents of Childbirth	18	·059
Diseases of Locomotor System	6	·019
Diseases of Integumentary System	2	2·026
TOTAL	3,133	10·3
Deaths from other Specified Diseases	0	0·00
Do. Ill-defined and Unspecified Causes	353	1·164
Violent Deaths	166	·546
Deaths from all Causes	7,094	23·3
Deaths from Principal Zymotic Diseases	578	1·902

DUBLIN REGISTRATION AREA.*—CAUSES of DEATH in the years

NAMES OF DISEASES	NUMBER OF DEA								
	1898 52 weeks	1899 52 weeks	1900 52 weeks	1901 52 weeks	1902 53† weeks	1903 52 weeks	1904 52 weeks	1905 52 weeks	
GENERAL DISEASES:—									
Small-pox, ...	—	—	—	—	—	36	—	—	
Measles, ...	9	656	75	7	392	49	191	97	
Scarlet Fever, ...	89	51	22	31	76	63	26	24	
Typhus, ...	2	5	2	3	8	2	1	—	
Whooping-cough, ...	154	150	137	235	59	129	239	48	
Diphtheria, ...	65	66	54	54	85	60	35	32	
Pyrexia‡ (origin uncertain), ...	7	4	6	10	4	3	4	8	
Enteric Fever, ...	179	182	133	107	121	94	74	64	
Diarrhœal Diseases, ...	381	529	365	390	237	151	339	284	
Pneumonia, ...	522	720	606	606	620	522	619	553	
Tuberculous Disease, {Phthisis, ...	1232	1293	1348	1274	1261	1218	1172	1207	
Tuberculous Disease, {Other Forms, ...	732	748	726	602	475	560	607	517	
Other General Diseases, ...	1056	1097	1158	1062	998	1109	1128	1073	
TOTAL, ...	4428	5501	4632	4381	4336	3996	4435	3907	
LOCAL DISEASES:—									
Diseases of {Nervous System. ... }	1716	1822	1894	1996	{ 961	809	720	723	
Diseases of {Heart and Blood Vessels, }					{1073	1365	1290	1258	
Diseases of {Organs of Special Sense ...	10	10	6	9	10	7	11	10	
Diseases of {Respiratory System (exclusive of Pneumonia),	1219	1363	1456	1254	1339	1183	1168	1008	
Diseases of {Digestive System, ...	394	460	453	427	554	515	553	561	
Diseases of {Lymphatic System, etc., ...	9	14	13	14	14	22	20	12	
Diseases of {Urinary System, ...	196	214	223	260	276	261	283	241	
Diseases of {Generative System, ...	15	12	18	21	20	19	22	12	
Accidents of Childbirth, ...	21	22	23	24	40	26	21	21	
Diseases of Locomotor System, ...	26	20	15	20	29	14	10	5	
Diseases of Integumentary§ ,, ...	31	19	30	37	31	22	14	16	
TOTAL, ...	3637	3956	4131	4062	4347	4243	4112	3867	
Other Specified Diseases, ...	—	—	—	—	—	—	—	—	
DEATHS FROM ILL-DEFINED AND UNSPECIFIED CAUSES,... ...	1031	999	989	877	823	591	519	443	
VIOLENT DEATHS, ...	238	274	235	251	221	217	198	208	
DEATHS FROM ALL CAUSES, ...	9334	10730	9987	9571	9727	9047	9264	8425	
Annual Death Rate per 1000 of Pop.*	25·2	28·7	26·5	25·4	25·3	23·9	24·4	22·2	
Mean Temperature of the Air (Fahr.)	49°·8	49°·2	—	47°·7	47°·9	47°·7	48°·1	48°·4	
Rainfall in inches, ...	29·61	26·87	37·21	25·79	26·97	32·48	22·62	24·46	

*The figures given for 1898-1900 are for the Dublin Registration Area as then constituted; those for 1901-1908
† The numbers for the years 1902 & 1908 embrace the returns for 53 weeks, and those for the 4th quarter
spond with the calendar year. ‡ Formerly descri
Deaths from Carbuncle, Cellulitis, Phlegmon, and Lupus, which or the years 1898-1901 were includ

vith the Ratio of the Deaths to the Population (Registrar-General's Returns).

ISTERED		1908					Annual rate for each cause per 10,000 Persons living.		NAMES OF DISEASES	
s	Yearly Average 1898-07	Total 53 weeks †	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter †	Yearly Average 1898-07	1908 53 weeks †		
									General Diseases :—	
.	4	—	—	—	—	—	0·1	—	Small-pox.	
54	169	150	7	34	55	54	4·5	3·7	Measles.	
14	41	19	2	9	5	3	1·1	0·5	Scarlet Fever.	
8	3	2	—	—	1	1	0·1	0·1	Typhus.	
28	148	91	28	22	14	27	3·9	2·3	Whooping-cough.	
17	54	49	11	15	9	14	1·4	1·2	Diphtheria	
4	5	2	—	—	1	1	0·1	0·1	*Pyrexia*‡ (origin uncertain).	
38	104	58	12	5	12	29	2·8	1·4	Enteric Fever.	
05	330	325	13	26	230	56	8·7	8·1	Diarrhœa, Dysentery.	
70	616	663	213	170	97	183	16·3	16·5	Pneumonia.	
33	1234	1174	335	277	257	305	32·6	29·3	Phthisis, } Tuberculous	
0	612	568	143	158	120	147	16·2	14·1	Other Forms, } Disease.	
7	1100	1232	405	298	252	277	29·1	30·7	Other General Diseases.	
58	4420	4333	1169	1014	1053	1097	116·9	108·0	Total	
									Local Diseases :—	
66	} 1966	{ 619	171	162	148	138	} 52·0	{ 15·4	Nervous System.	Diseases of
71		{1341	401	316	292	332		33·4	Heart and Blood Vessels.	
9	9	6	2	2	—	2	0·2	0·1	Organs of Special Sense.	
01	1237	1184	458	255	142	329	32·7	29·5	Respiratory System (exclusive of Pneumonia).	
31	504	576	122	116	182	156	13·3	14·4	Digestive System.	
2	16	13	6	2	3	2	0·4	0·3	Lymphatic System, etc.	
67	255	271	74	66	66	65	6·7	6·8	Urinary System.	
7	17	23	3	6	6	8	0·5	0·6	Generative System.	
7	25	23	9	2	6	6	0·7	0·6	Accidents of Childbirth.	
0	17	14	3	3	3	5	0·5	0·4	Diseases of Locomotor System.	
6	23	18	8	6	1	3	0·6	0·5	Diseases of Integumentary§ ,,	
7	4069	4088	1257	936	849	1046	107·6	102·6	Total.	
	—	—	—	—	—	—	—	—	Other Specified Diseases.	
0	722	427	134	107	91	95	19·1	10·7	Deaths from ill-defined and Unspecified causes.	
2	228	222	59	52	58	53	6·0	5·5	Violent Deaths.	
7	9439	9070	2619	2109	2051	2291	249·6	226·2	Deaths from all causes.	
2	25·0	22·6	26·6	21·4	20·8	21·6	—	—	Annual Death Rate per 1000 of Pop.	
7	—	48·8	41·0	49·3	56·8	47·9	—	—	Mean Temperature of the Air(Fahr.)	
2	27·74	24·41	5·93	5·78	8·17	4·53	—	—	Rainfall in inches.	

t present existing. The rates are calculated on the population estimated to the middle of the respective years.
ns for 14 weeks. This arrangement is occasionally necessary in order that the annual series may corre
e Continued Fever."
ses of the Integumentary System," have been tabulated among the "General Diseases" for the years 1902-1908

TABLE V.—SHOWING FOR THE YEAR 1908 (53 WEEKS) THE NUMBER OF DEATH AREA, the Rate per 1,000 of the Population of the respective Districts represent Mortality from some of the principal causes; also the Deaths at certain ag *being assigned to the Districts from which the deceased were admitted.*

REGISTRARS' DISTRICTS, &c.	POPULATION, ESTIMATED TO MIDDLE OF 1908*	YEAR 1908 (53 WEEKS) ANNUAL RATE OF MORTALITY PER 1000 LIVING REPRESENTED BY DEATHS		TOTAL DEATHS	DEATHS							
		FROM ALL CAUSES	FROM DISEASES IN COLS. 11-19		Infants under 1 year of Age.	1 and under 5 years.	5 and under 20 years.	20 and under 40 years.	40 and under 60 years.	Persons aged 60 years and upwards	CAUSE Small-pox	Measles
COLS.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(1
NORTH CITY.												
NORTH CITY, No. 1, E. ...	29289	23·6	2·0	702	164	89	50	101	142	156	—	1
,, 1, W. ...	39146	23·6	2·1	939	194	114	54	147	227	203	—	1
,, 2 ...	30107	24·9	1·6	761	176	109	39	106	162	169	—	
,, 3 ...	32865	23·2	2·5	776	188	108	51	101	135	193	—	3
CLONTARF AND HOWTH, No. 1, part of	5269	15·3	2·6	82	12	5	4	15	20	26	—	
COOLOCK AND DRUMCONDRA, part of	11382	16·0	1·6	185	27	7	14	24	45	68	—	
FINGLAS AND GLASNEVIN, part of	7534	15·1	0·5	116	17	10	12	18	23	36	—	
SOUTH CITY.												
SOUTH CITY, No. 1	40617	25·9	2·3	1070	201	141	64	151	198	315	—	3
,, 2	21304	21·8	1·2	472	89	76	30	74	102	101	—	
,, 3	42332	24·0	1·5	1034	187	134	58	150	240	265	—	
,, 4	35138	22·7	1·6	811	140	100	60	113	192	206	—	
NEW KILMAINHAM	8891	16·2	2·5	146	28	18	10	21	36	33	—	
URBAN DISTRICTS.												
RATHMINES AND RATHGAR ...	36087	16·1	1·1	590	97	38	24	87	104	240	—	
PEMBROKE	28183	17·4	0·7	498	90	34	32	65	101	176	—	
BLACKROCK	8759	14·0	1·5	125	21	16	6	16	26	40	—	
KINGSTOWN	17622	18·3	1·3	327	52	29	29	39	63	115	—	
TOTAL CITY, NORTH	155592	22·5	2·0	3561	778	442	224	512	754	851	—	6
TOTAL CITY, SOUTH	148282	23·4	1·8	3533	645	469	222	509	768	920	—	6
TOTAL CITY, NORTH & SOUTH,	303874	23·0	1·9	7094	1423	911	446	1021	1522	1771	—	18
TOTAL URBAN DISTRICTS,	90651	16·7	1·1	1540	260	117	91	207	294	571	—	1
TOTAL REGISTRATION AREA,	394525	21·5	1·7	8634	1683	1028	537	1228	1816	2342	—	1
Deaths in Institutions of Persons admitted from without the Registration Area (not included in above) ...				436	31	26	39	130	116	94	—	

* See note (*) on page 90.

IDENTS OF THE SEVERAL REGISTRARS' DISTRICTS IN THE DUBLIN REGISTRATION
, and by the Deaths from the principal Epidemic Diseases; with the
, and the number of Uncertified Deaths; *the Deaths in Public Institutions*

ED 2ND JANUARY, 1909.

DEATHS.										REGISTRARS' DISTRICTS, &c.
CAUSED BY										
	Pyrexia† (origin uncertain)	Enteric Fever	Diarrhœal Diseases	Pneumonia	Tuberculous Disease: Phthisis	Tuberculous Disease: Other Forms	Cancer, Malignant Disease	Diseases of the Respiratory System	Violence (Accidental, Homicidal, and Suicidal)	Number of Uncertified Deaths	
	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	
											NORTH CITY.
5	—	5	30	58	87	50	22	94	24	19	North City, No. 1, E.
2	—	6	45	60	133	40	29	143	26	35	,, 1, W.
2	—	3	29	67	107	34	24	102	18	6	,, 2.
3	—	4	37	63	90	60	22	96	11	18	,, 3.
-	—	7	3	3	8	4	9	5	2	1	Clontarf and Howth, No. 1, part of.
3	—	4	6	10	22	5	13	18	6	4	Coolock and Drumcondra, part of.
-	—	—	—	1	7	14	9	11	6	1	3 Finglas and Glasnevin, part of
											SOUTH CITY.
3 4	—	10	—	78	163	58	46	183	20	23	South City, No. 1.
2 2	1	1	12	30	71	55	13	79	9	13	,, 2.
6	—	4	36	79	126	95	49	163	20	27	,, 3.
3 7	—	3	30	79	112	58	37	113	24	30	,, 4.
- -	—	—	19	8	23	6	4	10	5	6	New Kilmainham.
											URBAN DISTRICTS.
1 5	—	6	18	33	65	23	40	59	14	40	Rathmines and Rathgar.
- 5	—	1	8	25	53	22	25	56	10	15	Pembroke.
4 -	—	—	5	4	8	9	8	11	6	6	Blackrock.
7 -	1	—	14	33	27	14	23	26	7	24	Kingstown.
7 6	—	29	151	268	461	202	130	464	88	86	NORTH.
8 9	1	18	124	274	495	272	149	548	78	99	SOUTH. } TOTAL CITY.
5 5	1	47	275	542	956	474	279	1012	166	185	NORTH & SOUTH. } TOTAL CITY.
2 1	1	7	45	95	153	68	96	152	37	85	TOTAL URBAN DISTRICTS.
7 6	2	54	320	637	1109	542	375	1164	203	270	TOTAL REGISTRATION AREA.
4 3	—	4	5	26	65	26	51	20	19	—	

† Formerly described as "Simple Continued Fever."

SHOWING, BY CERTAIN AGE-PERIODS, THE POPULATION OF THE DUBLIN REGISTRATION AREA* IN 1901, the Number of Deaths registered in each of the years 1898-1908, and the proportion which the Deaths at each Age-period bear to the estimated Population at the same age (Registrar-General's Returns).

YEARS, etc.		AGES							
		ALL AGES	Under 20 years			20 and under 40	40 and under 60	60 and under 80	80 and upwards
			Under 5 years	5 and under 20	Total				
CENSUS POPULATION IN 1901		375350	38157	106723	144880	135683	68610	24273	1904
NUMBER OF DEATHS *Registered.*	Year 1898	9334	2923	738	3661	1507	1801	1955	410
	,, 1899	10730	3776	817	4593	1573	2067	2069	428
	,, 1900	9987	2885	765	3650	1627	2111	2119	480
	,, 1901	9571	2750	751	3501	1548	1988	2084	450
	,, 1902†	9727	3192	762	3954	1582	1924	1857	410
	,, 1903	9047	2563	648	3211	1522	1950	1962	402
	,, 1904	9264	3023	654	3677	1445	1808	1927	407
	,, 1905	8425	2426	640	3066	1372	1733	1851	403
	,, 1906	8857	2497	626	3123	1380	1934	2046	374
	,, 1907	9447	2935	669	3604	1410	1910	2117	406
	Yearly average, 1898-1907	9439	2897	707	3604	1496	1923	1999	417
	Year 1908†	9070	2768	576	3344	1358	1932	2032	404
	1st Quarter, 1908 ...	2619	673	133	806	387	606	689	131
	2nd ,, ,, ...	2109	552	157	709	335	467	495	103
	3rd ,, ,, ...	2051	769	149	918	293	395	380	67
	4th† ,, ,, ...	2291	774	137	911	343	463	468	103
NUMBER of DEATHS at each AGE-PERIOD to every 1,000 of the Estimated Population at SAME AGE.	Year 1898	25·2	74·5	6·8	24·9	11·9	26·0	77·6	212·8
	,, 1899	28·7	95·5	7·5	31·0	12·3	29 7	81·5	220·4
	,, 1900	26·5	72·4	7·0	24·4	12·6	30·0	82·8	245·3
	,, 1901	25·4	71·9	7·0	24·1	11·4	28·9	85·7	235·8
	,, 1902†	25 3	81 5	7·0	26·6	11·4	27·3	74·5	209·9
	,, 1903	23 9	66·5	6·0	22·0	11·1	28·1	80·1	209·2
	,, 1904	24·4	78·5	6·1	25·1	10 5	26·1	78·6	211·8
	,, 1905	22·2	63·0	5·9	21·0	10·0	25·0	75·5	209·7
	,, 1906	23·4	64·8	5·8	21·3	10·1	27·9	83·5	194·6
	,, 1907	24·2	73·9	6·0	23 9	10·0	26·7	83·8	204·8
	Yearly average, 1898-1907	24·9	74·3	6·5	24·4	11·1	27·6	80·4	215·4
	Year 1908†	22·6	67·9	5·1	21·6	9·4	26·4	78·4	198·6

* See note (*), pages 90 and 91.

† See note (†), pages 90 and 91

Showing by Ages, in Five General Classes and Inhabitants of the Dublin Registration Area in 1901 (Registrar-

Class	OCCUPATION OR SOCIAL POSITION. [The 26,600 persons returned under the head "Unspecified" in Table 94 of the General Report on the Census have been distributed *pro rata* among the several groups to which they most probably belonged.]	Population in each Class and Group in 1901
	ALL PERSONS, ...	375350
	CLASSES.	
	Families of the—	
I.	Professional and Independent Class, ...	17436
II.	Middle Class, ...	87188
III.	Artisan Class and Petty Shopkeepers, ...	110423
IV.	General Service Class,...	154279
V.	Inmates of Workhouses, ...	6024
	Professional and Independent Class.	
I.	1. Clerical, Medical, Legal, and other Professions; Naval and Military Officers; and Heads of Public Departments,...	7799
	2. Merchants and Manufacturers, Higher Class,... ...	1277
	3. Persons of Rank and Property, not otherwise described,	8360
	Middle Class.	
II.	4. General Body of Officials—Civil Service, Banking, &c.,	7712
	5. Traders (except Petty Shopkeepers), Business Managers, &c., ...	22016
	6. Clerks and Commercial Assistants, ...	30432
	7. Miscellaneous—including all Householders in Second Class Localities, not included in above, ...	27028
	Artisan Class and Petty Shopkeepers.	
III.	8. Working Engineers, Engravers, Printers, Watch-makers, and Jewellers.	9874
	9. Building and Furnishing Trades, ...	29801
	10. Clothing Trades, ...	23260
	11. Food Supply Trades, ...	9242
	12. Other Trades and Callings ranking with Trades, ...	30352
	13. Petty Shopkeepers, ...	7894
	General Service Class.	
IV.	14. Army, Police, Postal Delivery, and Prison Services, &c.	13425
	15. Domestic Servants, ...	36603
	16. Coach and Car Drivers, Vanmen, &c., ...	14390
	17. Hawkers, Porters, Labourers, &c.	89861
	Inmates of Workhouses.	
V.	18. Workhouse Inmates, ...	6024

HTEEN GROUPS, the Occupations or Social Position of the neral's Returns).

Ages						
d er 5 ars	5 and under 15	15 and under 20	20 and under 40	40 and under 60	60 and under 80	80 and upwards
8157	67552	39171	135683	68610	24273	1904
937	2136	1322	5665	4490	2532	354
7418	14383	9936	33875	15662	5460	454
2336	21973	11462	37921	20434	5920	377
7205	28768	16320	57135	26398	7989	464
261	292	131	1087	1626	2372	255
541	997	548	2654	2196	793	70
139	268	98	325	322	116	9
257	871	676	2686	1972	1623	275
822	1509	822	2461	1658	412	28
2819	5110	1330	6494	4995	1181	57
2477	3842	5170	14637	3630	663	13
1270	3922	2614	10283	5379	3204	356
1364	2151	940	3627	1512	271	9
4037	6963	2619	9373	5452	1289	68
1359	2995	3338	9277	4484	1700	107
1279	2023	742	3300	1565	320	13
3472	6258	3151	9923	5623	1770	155
825	1583	672	2421	1798	570	25
1376	2217	2238	5068	1655	836	35
916	2256	5873	18887	6290	2203	178
2250	3385	838	5084	2416	407	10
2663	20910	7371	28096	16037	4543	241
261	292	131	1087	1626	2372	255

REGISTRATION OF BIRTHS AND DEATHS IN THE DUBLIN REGISTRATION AREA.

Showing in FIVE GENERAL CLASSES and EIGHTEEN GROUPS, the OCCUPATIONS or So
YEAR (53 weeks) ending Saturday, 2nd January, 1909; the Annual Death-rate repres
from some of the Principal Causes of Death; also the Number of Uncertified Deaths.

Class.	OCCUPATION OR SOCIAL POSITION. [The 26,600 persons returned under the head "Unspecified" in Table 94 of the General Report on the Census have been distributed *pro rata* among the several groups to which they most probably belonged.	Population in each Class and Group in 1901	REGISTRATION OF DEATHS, YEAR: Annual Death Rate per 1000 of the population in 1901	Total Number of Deaths	AGES: Under 5 Years	5 and under 20	20 and under 40	40 and under 60	60 and under 80	
	Cols.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(
	ALL PERSONS	375350	23·8	9070	2768	576	1358	1932	2032	4
	CLASSES Deaths in Families of the—									
I.	PROFESSIONAL AND INDEPENDENT CLASS	17436	14·4	256	8	1	21	55	115	
II.	MIDDLE CLASS	87188	15·9	1411	251	85	225	311	402	1
III.	ARTISAN CLASS AND PETTY SHOPKEEPERS	110423	17·6	1977	598	131	310	489	388	
IV.	GENERAL SERVICE CLASS ...	154279	22·8	3571	1651	296	498	568	491	
V.	INMATES OF WORKHOUSES ...	6024	.	1855	260	63	304	509	636	
I.	PROFESSIONAL AND INDEPENDENT CLASS									
	1. Clerical, Medical, Legal and other Professions; Naval and Military Officers, and Heads of Public Departments	7799	22·2	176	7	1	15	42	77	
	2. Merchants and Manufacturers, Higher Class	1277	6·2	8	.	.	.	2	4	
	3. Persons of Rank and Property not otherwise described ...	8360	8·5	72	1	.	6	11	34	
II.	MIDDLE CLASS									
	4. General Body of Officials—Civil Service, Banking, etc. ...	7712	16·2	127	21	7	11	26	44	
	5. Traders (except Petty Shopkeepers), Business Managers, etc.	22016	15·1	337	62	15	28	97	104	
	6. Clerks and Commercial Assistants	30432	13·7	423	122	34	102	87	65	
	7. Miscellaneous — including all Householders in Second Class Localities, not included in above	27028	19·1	524	46	29	84	101	189	
III.	ARTISAN CLASS AND PETTY SHOPKEEPERS.									
	8. Working Engineers, Engravers, Printers, Watchmakers, and Jewellers	9874	18·7	188	77	16	27	30	34	
	9. Building and Furnishing Trades	29801	16·4	497	199	22	53	133	81	
	10. Clothing Trades	23260	11·3	267	61	21	58	67	50	1
	11. Food Supply Trades... ...	9242	15·3	144	53	11	18	27	30	
	12. Other Trades and Callings ranking with Trades... ...	30352	24·7	761	173	52	130	208	166	3
	13. Petty Shopkeepers	7894	15·0	120	35	9	24	24	27	
IV.	GENERAL SERVICE CLASS.									
	14. Army, Police, Postal Delivery and Prison Services, etc. ...	13425	18·9	258	81	15	43	42	67	1
	15. Domestic Servants	36603	8·0	298	84	17	69	49	66	1
	16. Coach and Car Drivers, Vanmen, etc	14390	22·8	333	145	26	42	74	41	
	17. Hawkers, Porters, Labourers, etc.	89861	29·4	2682	1341	238	344	403	317	3
V.	INMATES OF WORKHOUSES.									
	18. Workhouse Inmates... ...	6024	.	1855	260	63	304	509	636	8

YEARLY SUMMARY

...TION of the PERSONS whose DEATHS were registered in the Dublin Registration Area during the ...e Deaths registered, the Number of Deaths at each of Six Periods of Life, and the Number

(53 WEEKS) ENDING SATURDAY, 2nd JANUARY, 1909.

CAUSES OF DEATH.																		CLASS AND ORDER.
Diarrhœa	Measles	Scarlet Fever	Typhus	Whooping-cough	Diphtheria	*Pyrexiæ* (origin uncertain)	Enteric Fever	Diarrhœal Diseases	Total. Cols. 10-18.	Pneumonia	Tubercular Disease: Phthisis	Tubercular Disease: Other Forms	Cancer, Malignant Disease	*Convulsions.*	Diseases of the Respiratory System	Violence (Accidental, Homicidal, & Suicidal)	Other Causes	Number of Uncertified Deaths	
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	
.	150	19	2	91	49	2	58	25	696	66	1174	568	426	28	1184	222	3899	270	
.	.	.	.	.	.	.	.	4	4	4	9	4	29	1	19	4	182	4	I.
.	8	5		7	7	1	15	39	82	81	152	46	115	30	108	41	756	43	II.
.	23	2	.	21	11	.	15	67	139	150	294	122	76	53	234	32	877	60	III.
.	115	11	2	62	31	1	27	199	448	330	368	258	120	146	414	136	1351	163	IV.
.	4	1	.	1	.	.	1	16	23	98	351	138	86	8	409	9	733	.	V.
																			I.
.	.	.	.	.	.	.	.	4	4	4	7	2	23	1	13	3	119	4	1
.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	6	.	2
.	.	.	.	.	.	.	.	.	.	.	2	2	4	.	6	1	57	.	3
																			II.
.	1	1	.	.	1	.	2	1	6	4	8	5	15	2	9	.	78	3	4
.	3	.	.	1	1	.	1	7	13	24	21	9	28	7	27	15	193	11	5
.	3	2	.	4	4	1	7	22	43	26	78	22	19	15	34	8	178	15	6
.	1	2	.	2	1	.	5	9	20	27	45	10	53	6	38	18	307	14	7
																			III.
.	3	1	.	4	2	.	3	14	27	11	26	17	6	8	16	1	76	7	8
.	7	.	.	5	1	.	1	25	39	46	56	29	15	20	65	8	219	18	9
.	2	.	.	1	3	.	3	4	13	16	52	15	9	6	42	1	113	7	10
.	1	.	.	4	1	.	1	3	10	17	25	12	5	6	12	1	56	5	11
.	10	1	.	6	3	.	6	16	42	54	120	41	31	13	77	19	364	19	12
.	.	.	.	1	1	.	1	5	8	6	15	8	10	.	22	2	49	4	13
																			IV.
.	5	2	.	2	3	.	6	15	33	23	27	14	11	4	28	5	113	4	14
.	5	2	.	1	.	.	4	20	32	30	38	11	17	7	22	11	130	11	15
.	6	2	.	5	3	.	.	17	33	34	36	27	16	10	45	7	125	16	16
.	99	5	2	54	25	1	17	147	350	243	267	206	76	125	319	113	983	132	17
.	4	1	.	1	.	.	1	16	23	98	351	138	86	8	409	9	733	.	V.
																			18

*Formerly described as "Simple Continued Fever."

BIRTHS AND DEATHS REGISTERED DURING THE YEAR 1908 (53 WEEKS) IN THE DUBLIN REGISTRATION AREA, and in each of the undermentioned Twenty-one Urban Districts (exclusive of Deaths in Public Institutions of persons admitted from other localities), with the number of Deaths from some of the principal causes; also the number of Uncertified Deaths

TOWNS AND DISTRICTS.	Census Statistics of Districts * Population Total	Population Persons to an Acre	REGISTRATION—Year 1908 (53 Weeks) Annual Rate per 1,000 persons represented by BIRTHS	Deaths from All Causes	Deaths from Diseases in Cols. 10-18	NUMBERS REGISTERED BIRTHS	DEATHS Total Number	Under 1 Year of Age	At 60 years and upwards	Caused by Small-pox	Measles	Scarlet Fever	Typhus	Whooping-cough	Diphtheria	*Pyrexia*† (origin uncertain)	Enteric Fever	Diarrhœal Diseases	Pneumonia	Tubercular Disease: Phthisis	Tubercular Disease: Other Forms	Cancer, Malignant Disease	Diseases of Respiratory System	Violence	Inquest Cases	No. in Public Institutions.	Number of Uncertified Deaths
Cols.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
Total of 22 Town Districts . .	1131959	19·9	28·5	20·2	1·7	32740	23232	4584	6114	—	474	37	21	328	112	5	154	783	1755	2893	1286	898	3464	451	730	7248	948
Dublin Registration Area: Total, .	394525	28·7	28·7	21·5	1·7	11500	8634‡	1683	2342	—	148	16	2	87	46	2	54	320	637	1109	542	375	1164	203	250	3448	270
City of Dublin.	303874	38·4	31·8	23 0	1·9	9833	7094	1423	1771	—	130	13	2	75	35	1	47	275	542	956	474	279	1010	166	218	3059	185
Urban Districts. Rathmines and Rathgar .	36087	21·1	16·6	16·1	1·1	608	590	97	240	—	7	1	—	1	6	—	6	18	33	65	23	40	59	14	11	143	40
Urban Districts. Pembroke .	28183	17·7	20·5	17·4	0 7	587	498	90	176	—	6	1	—	—	5	—	1	8	25	53	22	25	56	10	12	132	15
Urban Districts. Blackrock .	8759	8 1	15·3	14·0	1·5	136	125	21	40	—	4	—	—	4	—	—	—	5	4	8	9	8	11	6	3	29	6
Urban Districts. Kingstown .	17622	12·1	18·8	18 3	1·3	336	327	52	115	—	1	1	—	7	—	1	—	14	33	27	14	23	26	7	6	85	24
Urban Districts.																											
Belfast . . .	380344	25·8	29·7	19·5	1·8	11490	§7525	1692	1634	—	186	4	10	137	33	2	57	260	753	880	378	281	1210	165	312	1813	99
Cork . . .	76122	33·6	26·9	22·0	1·8	2084	1700	281	472	—	13	6	4	13	9	—	16	79	62	245	93	59	233	12	53	651	83
Londonderry . .	42872	19·8	25·6	18·1	1·7	1114	790	141	217	—	—	—	—	38	1	—	6	31	35	100	37	34	132	19	31	135	18
Limerick . . .	38151	18·1	27 6	20·6	1·1	1071	798	135	193	—	10	6	—	8	4	—	4	11	64	88	60	19	163	4	23	306	102
Waterford . . .	26769	18·7	26·8	21·3	3·1	728	579	94	174	—	56	1	—	—	—	1	—	26	26	76	25	21	86	10	12	191	40
Galway . . .	13426	2·5	24·7	19·4	1·5	337	265	46	95	—	7	1	1	5	4	—	1	2	19	28	5	5	18	7	1	77	43
Dundalk . . .	13076	9·4	26·0	14·4	0·7	345	192	27	62	—	—	—	—	4	1	—	2	2	12	22	11	10	22	3	4	48	10
Drogheda . . .	12760	8·6	24 1	15·7	0·7	313	204	27	72	—	—	1	3	—	3	—	1	1	7	20	8	9	30	3	3	58	13
Newry . . .	12405	17·8	21·7	19·4	0·8	274	245	25	90	—	4	—	—	2	1	—	2	1	10	32	5	13	34	5	8	92	15
Lurgan . . .	11782	13·8	31·0	18·6	1·2	371	223	39	74	—	—	1	—	8	1	—	1	3	21	30	14	3	24	4	6	50	18
Lisburn . . .	11461	10·1	27·4	18·2	0·8	319	212	45	62	—	—	1	—	—	6	—	—	2	10	2)	17	8	28	—	4	46	10
Wexford . . .	11168	23·2	33·1	21·1	1·5	376	240	63	71	—	1	—	—	9	—	—	—	7	2	26	20	10	65	2	4	33	36
Ballymena . .	10886	8·9	27·0	17·1	0·5	299	189	27	69	—	—	—	1	—	—	—	1	4	12	26	15	8	28	3	1	25	17
Sligo . . .	10870	3·7	23·4	18·9	2·4	259	209	33	68	—	13	—	—	10	3	—	—	1	10	28	7	8	22	—	2	56	36
Kilkenny . . .	10609	11·5	24·3	17·9	0·3	262	193	28	73	—	—	—	—	—	—	—	—	3	13	25	2	4	50	—	2	63	31
Clonmel . . .	10167	7·8	25·4	16·6	1·5	263	172	31	70	—	4	—	—	5	—	—	2	5	10	28	8	3	35	—	1	68	24
Portadown . .	10092	13·2	32·8	17·9	1·1	336	184	43	46	—	3	—	—	2	—	—	1	5	9	29	11	6	25	6	8	—	16
Tralee . . .	9867	16·6	33·8	23·8	3·6	339	239	55	72	—	25	—	—	—	—	—	2	9	19	24	3	3	20	2	3	38	3

* The Population given for the Dublin Registration Area, and its component parts, and the cities of Belfast, Londonderry, is that estimated to the middle of the year 1908; that for each of the other districts is the Population according to the Census of 1901.

† Formerly described as "Simple Continued Fever."

‡ Including 30 deaths from cerebro-spinal fever.

§ Including 66 deaths from cerebro-spinal fever, or *cerebro-spinal meningitis.*

The Vital Statistics of Seventy-six of the Largest English Towns during 1908.

Towns.	Estimated Population middle of 1908.	Annual Rate per 1000 Living.			Deaths from Principal Infectious Diseases.	Rate per cent. of Uncertified Deaths.
		Births.	Deaths.	Principal Infectious Diseases.		
76 Towns	16,234,952	26·9	14·9	1·59	26,116	0·9
75 Provincial Towns ...	11,439,195	27·6	15·4	1·67	19,517	1·3
London	4,795,757	25·4	13·8	1·35	6,599	0·1
Croydon	157,698	25·4	12·8	1·37	220	...
Willesden	154,792	26·1	10·5	1·00	159	0·4
Hornsey	92,713	16·1	8·3	0·57	54	0·3
Tottenham	126,146	30·2	12·5	1·23	157	0·1
West Ham	315,000	28·8	13·9	2 39	763	0·0
East Ham	142,976	24·8	10·3	1·27	185	...
Leyton	125,815	25·8	10·4	0·82	105	0·3
Walthamstow... ...	131,486	26·2	10·5	0·98	132	...
Hastings	67,817	15·5	11·7	0·40	28	0·7
Brighton	129,967	21·3	14·7	0·64	83	0·1
Portsmouth	211,493	28·4	13·8	0·97	207	0·5
Bournemouth... ...	70,801	17·1	12·9	0·71	51	0·8
Southampton	122,196	23·9	12·9	1·17	145	...
Reading	81,647	22·6	11·8	1·34	112	1·8
Northampton	96,405	20·9	11·6	0·71	70	1·9
Ipswich	73,852	24·5	14·3	0·89	67	...
Great Yarmouth ...	53,152	26·7	15·0	0·94	51	...
Norwich	122,841	25·2	14·1	1·12	140	0·7
Plymouth	122,113	22·2	15·0	0·91	113	...
Devonport	81,525	25·4	13·3	1·21	101	...
Bristol	372,785	23·1	13·6	1·16	435	0·2
Hanley	67,998	33·0	18·4	1·97	137	0·9
Burton-on-Trent ...	53.936	22·1	12·7	1·06	58	2·0
Wolverhampton ...	103,318	25·8	14·3	1·22	127	0·3
Walsall	97,778	29·6	14·9	2·07	206	0·6
Handsworth	68,051	23·0	10·7	0·84	59	1·5
West Bromwich ...	69,786	32·4	16·2	1·82	129	1·7
Birmingham	558,357	28·4	15·9	1·86	1,053	3.8
King's Norton... ...	78,608	24·7	10·4	0·88	70	3·6
Smethwick	68,416	31·0	13 4	1·53	106	1·1
Aston Manor	84,256	26·1	12·5	1·90	161	0·7
Coventry	78,889	32·8	15·4	1·10	88	1·9
Leicester	240,172	23·4	13·0	1·53	375	1·1
Grimsby	71,800	31·7	14·4	1·46	107	1·3
Nottingham	260,449	26·6	15·2	1·25	332	0·7
Derby	127,583	25·9	13·1	0·95	122	...
Stockport	102,339	27·7	18·2	2·45	254	0·2
Birkenhead	119,830	31·4	15·8	1·88	229	0·8
Wallasey	68,849	25·2	13·6	1·51	106	1·2
Liverpool	753,203	31·7	19·2	2·19	1,676	2·7

THE VITAL STATISTICS OF SEVENTY-SIX OF THE LARGEST ENGLISH TOWNS DURING 1908—*continued.*

Towns.	Estimated Population middle of 1908.	Annual Rate per 1000 Living.			Deaths from Principal Infectious Diseases.	Rate per cent. of Uncertified Deaths.
		Births.	Deaths.	Principal Infectious Diseases.		
Bootle	68,248	31·3	18·2	2·50	173	3·5
St. Helens	93,812	34·7	15·7	1·52	145	3·3
Wigan	89,636	32·8	18·0	1·88	170	0·1
Warrington	71,268	32·7	17·0	2·41	175	4·4
Bolton	185,358	24·5	15·4	1·70	319	0·4
Bury	59,064	23·0	15·8	1·22	73	1·3
Manchester	649,251	29·1	18·2	2·25	1,488	0·7
Salford	239,294	29·6	17·8	3·04	738	0·5
Oldham	142,507	28·0	19·8	2·50	363	0·1
Rochdale	88,821	24·6	18·4	2·18	196	2·3
Burnley	105,100	28·2	17·9	2·80	300	1·7
Blackburn	135,961	25·0	15·7	1·56	215	1·8
Preston	117,799	27·0	18·0	2·24	268	3·3
Barrow-in-Furness ...	62,312	30·0	13·1	1·09	68	3·3
Huddersfield	94,776	24·4	17·1	1·61	115	1·0
Halifax	111,018	19·0	14·1	1·01	113	1·4
Bradford	292,136	20·2	15·5	1·36	404	0·2
Leeds	477,107	24·8	15·3	1·49	728	0·1
Sheffield	463,222	30·7	15·8	1·85	867	2·5
Rotherham	63,736	32·8	16·0	2·88	186	1·6
York	85,861	25·1	12·6	1·14	100	0·1
Hull	271,137	30·2	16·2	2·19	605	0·8
Middlesbrough ...	103,511	35·9	19·8	3·47	365	1·0
Stockton-on-Tees ...	53,160	31·6	18·0	2·70	146	1·4
West Hartlepool ...	77,573	26·4	12·0	0·72	57	0·5
Sunderland	157,693	33·0	17·7	1·86	296	2·3
South Shields ...	115,535	30·1	15·5	1·69	197	4·6
Gateshead	128,393	30 9	14·9	1·90	248	5·4
Newcastle-on-Tyne ...	277,257	29·7	16·0	1·26	354	0·3
Tynemouth	55,244	34·3	17·5	1·61	90	2·5
Newport, Mon. ...	76,955	32·6	16·1	1·28	100	0·6
Cardiff	191,446	26·6	13·0	1·10	214	0·1
Rhondda	133,137	40·3	18·4	3·49	474	0·7
Merthyr Tydvil ...	77,219	35·6	19·1	2·49	196	1·1
Swansea	97,810	33·1	18·5	1·58	158	0·2

The Vital Statistics of the London Metropolitan Boroughs after Distribution of Deaths occurring in Public Institutions during the Fourth Quarter of 1908.

Boroughs	Estimated Population of middle 1908	Annual Rate per 1000 living			Deaths of Children Under 1 Year of Age to 1,000 Births
		Births	Deaths	Principal Infectious Diseases	
Paddington ...	150,923	18·9	11·5	0·73	128
Kensington ...	182,752	16·0	12·7	0·83	138
Hammersmith ...	124,012	22·4	14·2	1·05	154
Fulham	171,562	25·8	12·1	1·18	126
Chelsea	75,049	16·8	13·8	1·15	112
City of Westminster	170,545	14·4	12·9	0·65	123
St. Marylebone ...	126,867	30·0	14·5	1·27	79
Hampstead ...	92,654	13 0	8·7	0·40	68
St. Pancras ...	237,075	22 3	14·4	0·73	121
Islington ...	349,091	22·7	13·9	1·26	128
Stoke Newington ...	54,015	17·7	12·3	0·91	90
Hackney ...	235,253	22·3	12·9	1·06	114
Holborn	54,466	24·7	16·1	1·17	94
Finsbury ...	96,007	33·5	19·1	2·10	145
City of London ...	19,252	14·9	16·1	—	117
Shoreditch ...	115,227	27·5	17·1	1·75	148
Bethnal Green ...	131,066	29·4	16·9	2·64	130
Stepney	310,706	30·2	17·1	2·63	143
Poplar	171,616	28 0	14·9	1·59	127
Southwark ...	210,442	27·3	16·5	1·56	152
Bermondsey ...	127,910	31·5	19·0	2·74	155
Lambeth ...	321,344	25·6	12·5	0·83	92
Battersea ...	183,873	22·7	11·7	0·91	115
Wandsworth ...	289,506	22·5	11·5	0·74	102
Camberwell ...	280,022	22·6	12·4	0·76	116
Deptford ...	117,539	22·9	12·5	1·21	154
Greenwich ...	109,110	21·6	11·9	1·15	128
Lewisham ...	156,627	19·9	10·5	1·70	111
Woolwich ...	131,346	23·0	10·9	0·89	84

INFANTILE MORTALITY.

Year 1908.	Deaths under one year of age.			
	Rate per 1000 of the estimated population under one year of age.	Rate per 1000 of the Registered Births.	Proportion per 1000 of the Total Deaths.	Rate per 1000 of the Total Population.
England and Wales...	122	121	218	3.2
76 Largest English Towns, including London	131	128	232	3.5
London	114	113	207	2.9
75 English Provincial Towns	138	134	242	3.8
Dublin	150	146	195	4.3

The death rate was 12 per 1,000 higher than the average rate in the 75 English provincial towns.

In general the infantile death rate in Dublin is about the same as the mean rate in the 75 largest English towns, excluding London. In 1906 the rate in Dublin was slightly lower than the rate in the 75 towns. The rate per 1,000 births was 146 in Dublin, 151 in the great towns, and only 130 in London. In 1907 the Dublin rate was above the usual rate, whilst the rate in the English towns was no less than 20 per 1,000 births less than in 1906. This decline was probably due to the mild summer of 1907, which reduced the high death rate from diarrhœal diseases and other maladies usually high in England in hot summers.

In previous reports I have dwelt at much length on the subject of infant mortality. I have tried to prove that the great loss of infant life is chiefly due

to improper and deficient nourishment, generally due more to ignorance than intention. The six lady sanitary sub-officers in the service of the Public Health Committee devote a large proportion of their time to giving instruction to mothers relative to the feeding and general care of their infants and young children. The ignorance of young mothers on this subject is often very great. Some time ago the Public Health, at my request, sent a Report to the Municipal Council, suggesting that information as to births might, for a small fee, be procured from certain officials, such as clerks registering baptisms and other officials. The Council approved of the suggestion, but the Local Government Board pointed out that there was no statutory power to pay such proposed fees.

In 1907 an Act of Parliament was passed rendering compulsory the early notification of births, and empowering the Sanitary Authorities to pay fees for the notification. It was one of those Acts which, unfortunately, are permissive, the word may being used instead of shall. The Public Health Committee recommended the Council to adopt the Act, but its consideration was postponed for a year. The following report was sent to the Council at the expiration of the year, and is now under consideration:—

Your Committee in obedience to your resolution of the 11th. December, 1908, requesting this Committee to report on the probable cost of carrying out the Early Notification of Births, have inquired into the subject. They beg to submit the following

report on the subject, prepared by their direction, by the Medical Superintendent Officer of Health :—

EARLY NOTIFICATION OF BIRTHS.

As the persons notifying births receive no fees for so doing, the expense of executing the Early Notification of Births Act would only be in connection with the printing of circulars, and addressed cards, and postage stamps. No additional officer would be required, as the chief function of the six lady sanitary sub-officers is the teaching of infant hygiene to mothers. Probably £60 would be more than the annual expenditure.

The Act is a useful one, and is being rapidly adopted in the English towns. Two years ago the Council were willing to pay for early notification of births, but they could not legally do so. Now they can have these notifications without payment, by simply adopting the Act.

PUBLIC HEALTH DEPARTMENT, CITY HALL,
BELFAST, 22*nd. December*, 1908.

DEAR SIR CHARLES,

I have much pleasure in replying to your query of this morning *re* The Notification of Births Act. The working of this Act in Belfast up to the present averages somewhat under £400 per annum, as follows:—

Four Ladies, at £78 per annum ...	£312
Uniform	20
Printing	20
Postage	25
	£377

You will notice that nothing is added for the clerical work, which is done in the general office.

With kind regards, and wishing you the "Compliments of the Season."

I am, Yours faithfully,
H. W. BAILIE.

To
Sir Chas. Cameron, M.D.,
Municipal Buildings,
Dublin.

PUBLIC HEALTH DEPARTMENT,
MUNICIPAL BUILDINGS, DALE STREET,
LIVERPOOL, 22*nd. December*, 1908.

E. W. Hope, M.D.,
Medical Officer of Health.

DEAR SIR CHARLES,

In reply to your inquiry, I have to state that the cost of administering the provisions of the Notification of Births Acts is approximately about £100 per year, this being the cost of postage and stationery. We do not pay any fee for the notifications. The Act is working well, and the results are, in my opinion, most useful.

The Female Sanitary Staff has recently been strengthened by the addition of one or two various duties, and the visitation of the births is divided amongst the entire Female Staff, twenty-one in number.

I reciprocate your good wishes for the New Year, and trust during it to receive frequent communications from you.

Yours very truly,

E. W. HOPE.

Sir Charles A. Cameron,
Dublin.

I have received a letter from the Medical Officers of Health, Liverpool and Belfast. In the latter City the expenses in carrying out the provisions of the Act average £400 but, of this sum £312 constitute the salaries of the lady sanitary officers, who had been appointed before the passing of the Early Notification of Births Act. The extra expense in connection with the Act would therefore appear to be £88.

Dr. Hope, of Liverpool, states that the cost is about £100 a year. The population of Liverpool is nearly three times greater than Dublin and that of Belfast, nearly 100,000 greater.

C. A. CAMERON.

Your Committee, before this Act was passed, recommended that voluntary notice of births should

be asked for and paid for. The Council adopted the recommendation, but the Local Government Board having pointed out that the notifications could not be legally paid for, the subject dropped. Now the notifications can be had without fees having to be paid for them.

In conclusion, your Committee beg to recommend the adoption of the Act.

All which your Committee recommend as their report, this 30th. day of December, 1908.

THOMAS KELLY,
Chairman.

Having regard to the very large proportion of very poor people in Dublin it is to be expected that the infantile death rate would be high—it is surprising that it is not higher.

Dr. T. B. Russell, late Medical Officer of Health for Glasgow, stated that 32 per cent. of all the children who die in Glasgow die in single room tenements.

Dr. Newman, Medical Officer of Health for Finsbury, states that in 1906 the infant mortality per 1,000 births was 211 in one room tenements, and only 99 in 4 room tenements. Only 14 per cent. of the population of Finsbury reside in one-room tenements, whilst in Dublin 37 per cent of all the families, and more than 40 per cent of the population, are denizens of one-room dwellings. A dwelling consisting of a single room is indicative of poverty and the ills associated with it. It follows that such a population as that of Dublin, with its excessive poor population cannot come up to the standard of longevity characteristic of the prosperous towns of England.

HOSPITAL RETURNS.

TABLE SHOWING THE NUMBER OF THE UNDERMENTIONED DISEASES treated during the year (52 weeks) ended Saturday, 30th December, 1907, in the principal Dublin Hospitals in which cases of Infective Diseases are received. The Returns apply to the Dublin Registration Area.

DISEASES.	No. of Cases in Hospital at close of previous year.	No. admitted during year.	Discharged.	Died.	No. under treatment on above date.
Small-pox	—	—	—	—	—
Measles	22	1028	909	72	69
Scarlet Fever ...	49	400	382	19	48*
Typhus	1	7	6	2	—
Diphtheria	28	383	341	37	33
Enteric Fever ...	38	490	321	30	77
Pneumonia	28	466	402	77	15

* Exclusive of 23 patients in "Beneavin," the Convalescent Home of Cork Street Fever Hospital.

NOTIFICATION OF INFECTIOUS DISEASES.

The following cases of Infectious Diseases were notified by Medical Practitioners during the year 1907. I think notification of infectious diseases is well carried out in Dublin :—

Small-pox	—
Rubella, or Epidemic Rose Rash ...	—
Scarlet Fever	316
Typhus Fever	7
Relapsing Fever	—
Diphtheria	376
Membraneous Croup	1
Continued Fever	155
Typhoid, or Enteric Fever	609
Erysipelas	540
Puerperal Fever	7
Cerebro-Spinal Fever	34
Total	2,032

SANITATION IN SCHOOLS.

In the Annual Report for 1904 an elaborate account was given of the condition of the primary schools. It was shown that many of them there was (1) overcrowding, (2) defective sanitary accommodation, and (3) want of adjustment of the size of the desks to the stature of the pupils. Some of these defects have been remedied, but most of them continue.

A recent Act of Parliament has been passed providing for the medical examination of school children; but it was not extended to Ireland.

The power of the sanitary authorities to close schools during epidemics, chiefly affecting children, such as scarlet fever, possessed by English bodies is denied to the Irish sanitary authorities. The medical inspection of school children would be most valuable. Evidence of incipient disease would be obtained, and the information obtained used to prevent incipient from becoming pronounced disease. The state of the teeth should be examined. Children suffering from discharges from the ear should be so placed as not to be too close to other pupils.

Proper accommodation for keeping the overcoats, caps, umbrellas, etc., of the pupils is generally very deficient, and in severe weather the temperature of the schools is often too low.

THE TENEMENT HOUSES.

The inspection of the tenement houses is systematically carried on by 31 sanitary sub-officers, of whom 6 are ladies. They act immediately under

the direction of a Superintendent, who, also, occasionally makes, as I do, independent examinations.

Each of the male sanitary sub-officers has, on the average, 245 houses to inspect, and re-inspections take about once in two months. In some instances, in which there are grave insanitary defects, more frequent inspections are necessary.

The inspectorial work is very large. In 1908, the number of rooms inspected was 196,347.

I know of no other city in which so large a proportion of the population reside in houses originally intended for higher classes of society. The slow growth of the population compared with that of the great development of population in Belfast and the English towns, accounts for the high percentage of the denizens in the tenement houses. By far the larger proportion of the poorer classes in Dublin reside in old houses originally designed each for a single family. The great increase of population in the towns above referred necessitate the erection of special dwellings for the working classes who are now chiefly located in houses built specially for them. There are, no doubt, in London and some other cities, tenement houses formerly occupied by single families, but nothing like to the same extent as in Dublin.

The tenement houses being nearly altogether very old, it is difficult to keep them in repair. The woodwork is often very much decayed. The floors of the rooms often slope considerably owing to subsidence of the walls. It often happens that a house

becomes so dilapidated that it has to be de-tenanted, and so unfit for human habitation. It is generally put into some kind of repair and re-opened, but soon after again requires repair. Very often this is due to the action of the tenants, who are very careless in preserving their apartments, stairs, etc., from injury. The breaking of window-glass is an every-day occurrence.

It is not to be expected that in a city containing more than 300,000 inhabitants, no purliens should exist; yet that is the belief of many persons in Dublin. There are in Dublin several thousands of persons of the very lowest class, many of them in a state of semi-starvation. This class embraces these unfortunate men obliged to carry placards through the streets, and known by the designation of " Sandwich Men." Very few of them ever get a sandwich to eat. When people can scarcely procure food, they are not likely to purchase soap. Poverty and dirt appear to be close allies.

There have been extensive clearances of slums in Dublin, and the substitution of neat, new dwellings for decayed and tumble-down houses. Unfortunately, the denizens of cleared areas never return to them, as they are unable to pay the higher rents required for the new dwellings. The " sanitary area " is improved, but the condition of the former occupiers of it is not. They go to cheaper houses, the condition of which they certainly do not improve.

The poverty of a large number of the working classes is very great. This is sometimes due to intemperance and other bad habits; but it often

happens that honest, sober, men, desirous of work cannot get it. At the best of times, where a labourer is earning a pound per week, his condition is not a flourishing one. He pays from 2s. to 3s. 6d. a week for his dwelling. Fuel costs about 1s. 4d. If he has a wife and children (nearly always the case) not much is left to feed and clothe himself and his family in a proper way. Many of the labouring classes do not earn £1 per week. The following is a genuine case:—

A man, his wife and 4 children reside in 83 Bride Street. He is a messenger, and earns only 11s. a week. His wife and youngest child are consumptives. The rent is 3s. a week. That leaves 8s. for food, fuel, light, clothes, bedding, etc. Their diet consists almost entirely of bread and tea.

An inspection of one of the poorest localities will reveal some rooms in which there is almost no furniture or domestic articles. Some rags, or a straw tick serve as a bed, an old soap box for a table; a bottle for a candlestick, and three or four requisite articles for cooking purposes complete the equipment.

The miserable condition of the very poor, so far as their home comforts are concerned, may be inferred from the following list of articles in the rooms of Nos. 1, 2, 3, 4, 16 and 17 Nerney's Court :—

No. 1.—

Front Parlour.—Occupied by husband, wife, and 3 children. No bed, sacks thrown on floor; pan, 2 buckets, 2 cans, 4 mugs, 2 tin canisters, tumbler, 4 bottles, small milk jug, statue, 5 pictures (frameless), 2 shawls, quilt, comb, bad clothes brush.

Back Parlour.—Occupiers, husband, wife and 2 children. Iron bedstead and ticking on boards laid across frame, covering—old dirty quilt; chair, broken table, knife, five pictures (1 framed), bucket, pan, basin, saucepan, 2 bowls, jug (enamel), delph mug, 2 cups, 2 saucers, knitted shawl.

Front Drawingroom.—Occupiers, husband, wife, and 3 children. Bed (frame, ticking, and straw mattress, covering-sheet and wearing apparel), bucket, bath, pan, 2 cans, broken shovel, chair bed, lamp, mug, plate, a dozen small pictures.

Back Drawingroom.—Occupiers, husband and wife. Bedstead and mattress, covering—quilt and old sacking; table, kettle, sweeping brush, 5 pictures, crock, stool, pot, saucepan, basket, tumbler, knife, 2 spoons, 2 cups and saucers, watch, two small glass jugs, 4 plates, scissors, lamp, boot brush.

Top Front Room.—Occupiers, father and daughter. Straw mattress on iron bedstead, covering—sacking; 3 tin boxes, 4 glass vessels, 2 alarm clocks, 4 mugs, 2 cans, broken tin trunk, bucket, tumbler, 6 pictures (frameless), brush, broken pan, half-dozen small articles.

Top Back Room.—Occupiers, husband, wife and child. No bed, tick, mat, and old blanket; broken stool, box, table, crude dresser, 2 cups, a mug, broken saucepan, teapot, canister, basket, scrubbing brush, 3 mugs.

No. 1A.—

Front Parlour.—Occupiers, husband, wife, and 2 children. Bed (straw mattress on bedstead, covering—dirty old sacking and wearing apparel), 2 tables, 2 stools, 2 buckets, dresser, 19 pictures (5 large), poker, 4 bottles, alarm clock, lamp, 3 candle-sticks, broken hatchet, brush, half-gallon can, and 10 small ornaments.

Back Parlour.—Occupiers, husband, wife, and 4 children. Bed (no frame, ticking with straw, wearing apparel for covering), 3 tables (1 good), 2 pans, saucepan, stool, small armchair, poker, bath, 8 pictures (2 large), basin, 3 delph teapots, 3 mugs, bowl, 2 cups, 4 books.

Front Drawingroom.—Occupiers, husband, wife, 2 children. Bed (iron bedstead and wooden stretcher, covering—sacks

over straw), bucket, 2 chairs, stool, dresser, 3 tables, 4 large pictures and a dozen small ones, 2 pans (1 broken), kettle, teapot, 3 mugs, 3 jugs, 2 tumblers, tick, sweeping brush, broken perambulator, basin, saucepan, broken fender and ash-tray, boot brush, lamp, backless chair, basket, small bath, 2 bottles, 2 alarm clocks, and a dozen small ornaments.

Back Drawingroom.—Occupiers, husband and wife. Fair bed covering—sacking; 2 stools, box, 2 tables, bucket, 2 jugs, 3 mugs, half-gallon can, 2 plates, 2 knives, 4 spoons, fork, small shovel, pot, saucepan, broken chopper, bath, 2 bottles, pan, lamp, bowl, brush, scissors, tumbler.

Top Front Room.—Occupier, one woman. Iron bedstead with straw mattress, covering—ticking, old quilt, and 2 squares of felt; table, 2 stools, dresser, trunk, 2 buckets, jug and basin, broken fender, kettle, shovel, poker, hatchet, large saucepan, 8 pictures, alarm clock, 4 cups and saucers, spirit lamp, 2 dozen small ornaments.

Top Back Room.—Occupiers, husband and wife. Iron bedstead (with ticking, covering—old ticking), 2 tables, broken stool, basin stand, lamp, basin, kettle, statue, brush, bucket, broken fender, crude dresser, can, knife, 2 cups and saucers, baking dish, plate, broken decanter, 2 small brushes, dozen small ornaments.

No. 2.—

Front Parlour.—Occupiers, husband, wife and 3 children. Bedstead, etc., and stretcher in fair condition, covering—ticking, old quilt, and wearing apparel. 2 tables, bath, bucket, trunk, chair, sweeping brush, teapot, jug, 2 tumblers, poker, lamp, boot brush, 7 small pictures, a dozen small ornaments.

Back Parlour.—Occupiers, husband, wife, and child. No bedstead, covering—rugs and wearing apparel; table, broken chair, fender, statue, poker, bucket, crude dresser, 2 mugs, knife, spoon, can, lamp, dish, a dozen small pictures and nick-nacks.

Front Drawingroom.—Occupiers, husband, wife, 2 children. Wooden bedstead and old quilt, box, stool, 2 tables, jug,

fender, 3 pots, saucepan, pan, knife, 2 buckets, lamp, 4 frameless pictures, 5 cups and saucers, broken jug, wine bottle, 2 mugs.

Back Drawingroom.—Occupier, husband and wife. Iron bedstead, with sacking and straw; bed of straw on floor, covering—sacking; 2 tables, 2 buckets, bath, 3 jugs, can, teapot, small kettle, brush, 3 spoons, 2 knives and forks, 2 mugs, 6 pictures, statue, glass, 2 plates, half-dozen small articles.

Top Front Room.—Occupiers, husband, wife, and 2 children. Bedstead, straw bedding, spring stretcher; covering—quilt, ticking and sacks, table, small press, 5 saucers, 2 plates, 2 jugs (broken), 2 buckets, 2 boxes, 2 tumblers, lamp, 5 frameless pictures, small kettle, 2 spoons, 1 dozen small ornaments.

Top Back Room.—Occupiers, husband, wife, and 3 children. Bedstead with straw mattress, covering—sacking; stool, two boxes, kettle, basin, bucket, jug, bowl, small pot, a dozen frameless pictures.

No. 3.—

Back Parlour.—Occupiers, husband and wife. Bedstead, and straw mattress, covering—fair quilt and ticking; 4 boxes, tin trunk, broken chair, wicker armchair, 2 stools, 2 lamps, sweeping brush, 2 baskets, jug and basin, glass jug, 2 cups and saucers, scissors, 2 mugs, glass, 8 pictures, bowl, mat, bellows, poker, broken pot, saucepan, shovel, bucket, 2 dozen small articles.

Front Drawingroom.—Occupiers, husband and wife. Bad bedstead, bad straw mattress, tub, 2 boxes, trunk, table, bucket, small bath, 3 plates, pot, teapot, 2 mugs, cup, kettle, poker, can, brush.

Back Drawingroom.—Occupiers, husband, wife, and 2 children. Bad bedstead, bad straw mattress, 2 tables, 2 boxes, trunk, broken armchair, tub, washboard, press, 3 egg cups, 2 tumblers, butter cooler, meat tin, knife, plate, comb, looking glass, 3 jugs, 2 lamps, 2 alarm clocks, pan, 2 kettles, 2 buckets, 3 small pictures, and nick-nacks.

Top Front Room.—Occupiers, husband and wife. Bad bedstead, with straw mattress, covering—sacking and wearing apparel, broken table, two stools, 3 saucepans, kettle, teapot, 3 spoons, knife, fork, jug, basket, pot, 2 mugs, 2 cups and saucers, lamp, brush.

Top Back Room.—Occupiers, husband and wife. No bed, small tick of straw, no covering, 2 tables, brush, pot, jar, crude dresser, 2 knives, 5 plates, stool, basin, 8 pictures (4 frameless), 3 bowls, 3 tumblers, 2 jugs, fork, 3 spoons, can, 2 buckets, pan, iron, glass, statue, 2 dozen small articles, 3 boot brushes.

No. 4.—

Front Parlour.—Occupiers, husband, wife, and child. Good bedding, 2 tables, 9 pictures, box, stool, sweeping brush, small cabinet, altar, chair, statue, melodeon, alarm clock, pan, 2 canisters, poker, broken car, lamp, cage, 4 cups and saucers, 3 mugs, 2 plates, comb, knife and fork, a dozen small articles.

Back Parlour.—Occupiers, husband and wife. Bedstead and straw mattress; covering—very old quilt and blanket with sacking; chair, stool, broken table, box, tick, pillow, 2 knives, scissors, 2 jugs, 2 plates, 2 tumblers, pan, broken chair, small bath, 5 small pictures, broken looking-glass, clock, saucepan, hatchet, dozen small ornaments.

Front Drawingroom.—Occupiers, husband, wife, and 2 children. Bedstead, straw mattress and covering, very fair; press, tub, broken, basin-stand, lamp, 11 pictures, bucket, kettle, saucepan, table, cabinet, tin trunk, broken glass, 2 canisters, statue, 3 plates, 3 saucers, mug, jug, fender, poker, box, knife, salt cellar, a dozen small nick-nacks.

Back Drawingroom.—Occupiers, husband and wife. No bed, tick of straw on floor; covering—very old quilt and blanket; 2 boxes, stool, 6 frameless pictures, lamp, bucket, can, small teapot, 2 saucepans, knife and fork, glass plate, mug, spoon, basket, poker, shovel, scissors, small glass, comb, ½-gallon can, a dozen small articles.

Top Front Room.—Occupiers, woman and 2 children. Bedstead and stretcher, bedding fair; covering—quilt, blanket, sacking and old cloth; 2 tables, 2 chairs, basket, clothes basket,

bath, bucket, 2 tins, 4 plates, 2 saucepans, 4 cups and saucers, 9 glasses and tumblers, teapot, 12 pictures, shovel, fender, poker, can, kettle, basin, statues, small cabinet, dresser, 4 jugs, lamp, 7 mugs, 2 dozen small articles.

Top Room.—Occupiers, husband and wife. 2 bedsteads; bedding—ticking containing straw; covering—old torn quilt and blanket; stool, box, bucket, knife, 2 spoons, pan, grid-iron, canister, 5 plates, broken fender, small glass, mug, 2 saucepans, small lamp, tray, dish cover, ½-gallon can, a dozen small articles.

No. 5.—

Front Parlour.—Occupiers, husband and wife. Bedstead, straw mattress, fair; covering very fair; 2 tables, 2 stools, ash-tray, poker, broken shovel, 2 buckets, pan, can, broken pot, 2 boxes, brush, tray, 2 plates, small plate, 2 cups and saucers, tin bath, knife and fork, 5 spoons, 2 glasses, scissors, lamp, ½-gallon can.

Back Parlour.—Occupiers, husband, wife and 3 children. No bed or bedding, wearing apparel and sacks; table, basket, tin trunk, brush, small lamp, scrubbing brush, bucket, saucepan, 3 plates, 4 mugs, broken pan.

Front Drawingroom.—Occupiers, husband, wife, and 4 children. Bad bedstead, bedding, sacking and straw; covering, bad blanket and sacks, 2 bad tables, 2 broken dressers, 6 plates, 2 mugs, 2 half-gallon cans, 10 small pictures (7 frameless), sweeping brush, 2 stools, 2 bowls, 3 cups, scissors, small basket, lamp, fork, spoon, 2 small oil-cans, broken chopper, glass mug, 6 tumblers, 2 salt-cellars, decanter, boot brush, small tin bath, 2 delph teapots, 1 large tin teapot, 2 broken knives.

Back Drawingroom.—Occupier, man and wife. Two bedsteads, mattress and ticking bad; covering—old quilt and blanket; 2 boxes, 2 tables, stool, small bath, brush, crude dresser, 2 large pictures, 6 frameless pictures, fender, broken glass, 2 jugs, teapot, cans, lamp, 3 canisters, 1 dozen nick-nacks.

Top Front Room.—Occupiers, husband, wife, and 2 children. Two bedsteads, bad; covering—sacking and old quilt; bedding, ticking containing straw; 2 stools, 2 canisters, table, can,

lamp, saucepan, altar, 3 spoons, knife and fork, glass jug, boot brush, scissors, awl, prayer-book, 6 pictures (5 frameless), basin, water can, kettle, bucket, pen and ink, thimble, tin box, 2 cups and saucers, sweeping brush, bicycle, 2 bottles, plate, salt cellar, 3 books, sweeping brush, 3 bagging cans, a half dozen small ornaments.

Top Back Room.—Occupiers, woman, 2 children. Bad bedstead, bad straw mattress; covering, old sheet and light quilt; stool, 2 boxes, small pot, basin, plate, mug, small jug, pan, 2 saucepans, 3 small pictures, bucket, lamp, kettle, 2 tin canisters, 2 knives, 2 spoons.

No 16.—

Ground Floor in ruins.

Front and Back Drawingrooms.—Occupiers, husband and wife, 3 children. Two beds, mattress, and feather ticking; covering—quilts and ticking; 2 stools, 3 tables, 2 chairs, 2 boxes, pan, teapot, poker, broken fender, 2 plates, 3 fruit dishes, 3 decanters, 9 jugs, cups, saucers and spoons, lamp, looking-glass, 2 dozen small articles, altar.

Top Floor 1st Room.—Occupiers, father, 2 children. Two good beds, one spring mattress; covering—good quilts and blankets; 3 tables, 7 baskets, basin stand, basin, bucket, 3 trays, ash-tray, 7 pictures, clock, glass, lamp, small dresser, kettle, pot, teapot, hammer, scales and weights, fender, poker, tongs, scrubbing brush, 2 stools, 5 tumblers, tea set, plates, 2 jugs, dishes and baking dish, hack seat, chopper, brush, square of tarpaulin, small looking-glass, 2 dozen small articles.

Top Floor 2nd Room.—Occupiers, husband, wife, 2 children. Bed, bedstead and mattress; covering—old quilt; dresser, 2 tables, stool, box, 13 pictures, 4 mugs, 2 cups, sugar bowl, lamp, brush, chair, scissors, altar, prayer-book, 2 oil measures, bottle, 2 canisters, 2 plates, kettle, pan, broken fender, basket, butter cooler, pot, looking-glass, enamel basin, tub, water can.

Top Floor 3rd Room.—Occupier, husband, wife, another woman and her child, 2 knives, tumbler, enamel jug, broken table, broken fender, pot, 2 enamel saucepans, 2 cans, 2 pans,

tin bath, 2 baskets, 2 grid irons, teapot, broken looking glass, 7 small pictures, 2 chairs, 2 plates, jug, basin, broken twig, spoon, lamp.

No. 17.—

Shop and Parlour.—Occupiers, husband and wife. Two good beds, piano, glass lamp, 4 tables, tub, fenders, pokers, pots, chairs, pictures, tumblers, glasses, an alarm clock, katch, 2 broken looking glasses, sweeping brush, spoons, knives and forks, cups and saucers, broken tin lamp, pot, boot brushes, 3 packages of salt, 16 boxes of matches, 11 mineral water bottles, 4 bottles of mineral water, turf, coal, scales and weights, 2 3-gallon oil cans, 2 saucepans, ½-gallon can, chest of drawers, 2 oil bottles, tun dish.

Back Drawingroom.—Occupiers, husband, wife. Bad bedstead, bedding—ticking; covering, very old quilt; 2 tables, fender, crude dresser, 3 boxes, 3 stools, small bath, 3 cans, 3 pictures (2 frameless), brush, 2 baskets, watch, lamp, bucket, broken crock, 3 bowls, 2 mugs, 2 plates, pan, kettle, sauce-pan, poker, water can, lady's old bicycle.

The six lady sanitary officers have done good work, and there is an improvement in the tenement houses as regards cleanliness. The women were specially instructed as regards the necessity of keeping their food under such conditions as would prevent it from becoming tainted. In many tenement houses in which flies were particularly numerous, fly-papers were distributed, and entangled many thousands of flies.



NERNEY'S COURT.

NERNEY'S COURT.

The following leaflet was widely distributed:—

CORPORATION OF DUBLIN.

PUBLIC HEALTH COMMITTEE.

DISEASE, DIRT, AND FLIES.

THE GREAT CARRIER OF DISEASE IS DIRT.

The cleaner the person, the clothes and bedding, the room, and whole dwelling, the less likelihood there is to become diseased.

DIRT ATTRACTS FLIES, and Fies carry dirt, and sometimes disease germs, into milk and other food, producing sometimes disease.

IN HOT WEATHER tainted food causes much of the illness of infants and young children.

If you desire to guard your children against *disease, keep them, their clothes, and their food* clean.

DESTROY FLIES (the carriers of disease) by means of cleanliness, which deprives them of food, and by means of FLY PAPER, which entraps and kills them.

COVER UP MILK, BUTTER, BREAD, &c., so that Flies cannot pollute them. Do not eat RAW cockles or mussels, as they may contain disease germs.

CHARLES A. CAMERON,
Medical Superintendent Officer of Health.

PUBLIC HEALTH COMMITTEE,
CASTLE STREET, *August*, 1908.

The Drainage System and Sanitary Accommodation of Tenement Houses.

As more than one-third of the population reside in tenement houses, defects in the system of the drainage of those houses would, if largely existing, tell severely upon a large proportion of the population. Twenty-five years ago there were very few tenement houses provided with water-closets; now there are very few without them. In proceedings taken to enforce the substitution of w.c.'s for privies, efforts were made to ensure that the w.c.'s would be of the most up-to-date pattern, but not always successfully. In the cases where w.c.'s were constructed some years ago, but not in a satisfactory manner proceedings are often taken to cause these defective w.c.'s to be replaced by better ones. Experience has shown that where the w.c. is used by more than one family it is rarely kept thoroughly clean. When the pan is enclosed with wood and provided with a wooden seat, the wood-work generally becomes saturated with objectionable matter and acquires a nasty odour. I have, therefore, in the lower class of tenement houses advocated the total disuse of wood. A naked pedestal closet and asphalte floor are, from a sanitary point of view, the the best for a tenement house. The wooden seats are now comparatively few.

In many of the older w.c.'s the water for flushing comes down through a pipe of too small bore. The quicker the quantity of water to be used for flushing is discharged into the pan the more efficacious the

flushing will be. Many of the pipes are only half-an-inch in bore, and in many cases the cisterns are so low that the water descends with but little force. A pipe with a diameter of 2 inches is the most effective.

When more than one family use a w.c., beyond flushing nothing is done. In private houses the brush must be used as well as full flushing to keep the w.c. thoroughly clean. This is almost never done in the tenement house. We see an excellent up-to-date w.c. not long in use, yet its sides are in a discoloured and filthy state. There are, however, a few tenement houses, the owners of which have the w.c.'s occasionally cleansed by the brush. Every year there is, on the whole, an improvement in the condition of the sanitary accommodation of the dwellings of the people.

The tenants in too many instances misuse the w.c. They throw articles into them which leads to their being blocked. I know a case where the landlord had four times within a month to open up a w.c. to remove obstructions, such as bottles, cabbage stalks, &c. The children too are not looked after when in the closet, and use the floor of it instead of the pan.

Troughs for receiving slops (usually thrown into the w.c. and soiling it), are very useful in the yards of tenement houses. Efforts to get them adopted have been made for several years past, and with some success. Fortunately the 49th section of the Public Health Acts Amendment Act, 1907 (7 Edw. 7, ch. 53), empowers the sanitary authority to enforce the provision of sinks.

LIST OF HOUSES UNFIT FOR HUMAN HABITATION CONDEMNED AND CLOSED BY MAGISTRATES' ORDERS DURING THE YEAR 1908.

	No.
Blessington Court, 4a	1
Bow Street, 4 and 5	2
Brabazon Row, 16 and 17	2
Buckingham Place, 8 and 8a	2
Calendar Yard, 2	1
Church Lane, Lr. Kevin St., 4, 5 and 6	3
Cook Street, 20, 21, 58, 62, 63, 70 and 80	7
Coombe, 48, 49, and rere of 22	3
Gardiner St., Middle, 26	1
Glorney's Buildings, 4, 5, 13 and 14	4
Kane's Court, 1	1
Kenny's Cottages (Golden Bridge), 1 and 2... ...	2
Luke Street, 21D and 22	2
Mabbot Street, 36 and 37	2
Mitchell's Court, 5	1
Neill's Court, 1, 2, 3, and 4	4
Richmond St., South, 4	1
Thomas Street, 160, 161 and 162	3
Vicar Street, 16	1
York Street, 8	1
Total, ...	44

Total number of insanitary houses ordered to be detenanted and closed since 31st August, 1879, 3,770.

LIST OF CLOSED HOUSES PUT INTO ORDER AND RE-OPENED DURING THE YEAR 1908.

	No.
Cook Street, 62, 63, 70 and 80	4
Chancery Lane, 25, 26 and 27	3
Mountjoy St., 48	1
Mountjoy St., Middle, 48	1
Spooner's Cottages, 1-6	6
South Richmond St., 4	1
Vicar St., 16	1
Total, ...	17

ROOMS IN OTHER HOUSES CLOSED DURING THE YEAR 1908.

	No.
Gloucester St., South, 33	1
Marlborough Street, 81	1
Total, ...	2

CELLAR DWELLINGS CLOSED DURING THE YEAR 1908.

	No.
Brunswick St., Great, 66B	1
Buckingham Place, 4	1
Cumberland St., South, 20	1
Mark St., 18	1
Mercer St., Upper, 16	1
St. Augustine St., 17	1
Total, ...	6

KITCHEN DWELLINGS CLOSED DURING THE YEAR 1908.

	No.
Erne St., Upper	1
Wentworth Place	2
Total, ...	3

Total number of cellar and kitchen dwellings closed since 31st August, 1879, 1,096.

IMPROVEMENTS CARRIED OUT UNDER THE PROVISIONS OF THE FACTORY AND WORKSHOP ACT (1901) DURING THE YEAR, 1908.

Situation of Premises.		Nature of Work Carried Out.
College Street, 3 & 4	...	Drain of Bakehouse Cleansed.
Hammond Lane Foundry	...	Roof of W.C. Repaired.
Bachelor's Walk, 21 & 22 (Dairy Engineering Co.)		W.C. Removed to a more Suitable Position.
Kyle House Laundry, Drumcondra		Floor Repaired.
Eustace St., 8	...	Workshop Cleansed.
Dawson St., 30	...	Workshop Cleansed.
Dawson St., 53	...	Workshop Cleansed.
Capel St., 157	...	Workshop Cleansed.
Capel St., 4	...	Workshop Cleansed.
Henry St., 39	...	Workshop Cleansed.
Ossory Road (Smith & Pearsons)		W.C. Repaired and Cleansed.
Dawson St., 51	...	Workshop Cleansed.
Grafton St., 74	...	Workshop Cleansed.
Grafton St., 4	...	Repairs and Cleansing.
Marlborough St., 87	...	Discharge Pipe Properly Fixed.
Capel St., 124	...	Cleansing and Repairs to W.C.
Nassau St., 20	...	Limewashing.
Great Strand St., 2	...	Cleansing.
Aungier St., 24	...	Limewashing.
Eden Quay, 5	...	Cleansing.
Capel St., 33	...	W.C. Partitioned off Workshop.
North Brunswick St., 76	...	Limewashing.
Dawson St., 3	...	Limewashing.
Great Britain St., 184	...	Cleansing.
Great Strand St., 14	...	Extra Sanitary Accommodation Provided.
Jervis St., 3	...	Cleansing and Limewashing.
South King St., 10	...	Limewashing.
George's St., South, 22	...	Cleansing.

Situation of Premises.	Nature of Work Carried Out.
Wicklow St., 40 ...	Separate Sanitary Accommodation Provided.
Hamman Hotel, Up. Sackville St.	Heating Apparatus Ventilated.
N.L. Laundry, Rutland Avenue, Dolphin's Barn	Repairs and Cleansing.
Berkeley Road, 15 ...	Cleansing.
Mary St., 2 ...	Cleansing.
Phibsboro', 145 ...	Limewashing and Cleansing.
Jervis Street, 68	Separate Sanitary Accommodation Provided.
Dame Court, 14 ...	Cleansing and Separate Sanitary Accommodation Provided.
Dame Court, 16 ...	Separate Sanitary Accommodation Provided.
Grafton St., 102 & 103 ...	Workrooms Cleansed.
Great Brunswick St., 28 ...	Limewashing.
Great Brunswick St., 33 ...	Overcrowding Abated.
Cornmarket, 8 ...	Cleansing and Limewashing.
Thomas St., 57 ...	Limewashing.
Westland Row, 44 ...	Limewashing.
Nassau St. (Browne & Nolan)	Sufficient Sanitary Accommodation Provided.
Grafton St. (Manning's) ...	Repairs and Cleansing.
Jones's Road (Walker & Co.) ...	Drain Intercepted.
Westmoreland St., 8 ...	Cleansing and Ventilation Provided.
Westmoreland St., 10 ...	Overcrowding Abated.
Westmoreland St., 11 ...	Overcrowding Abated.
Temple Lane, 13 ...	Cleansing.
Temple Lane, 18 & 19 ...	Cleansing.
Mary St., 63 (J. Burke & Sons)	Lighting and Ventilation Provided.
Halston St., 3 ...	W.C. Partitioned off Workroom.
Mid. Abbey St., 47 ...	Cleansing.
Mid. Abbey St., 65 ...	Cleansing.

Situation of Premises.		Nature of Work Carried Out.
Lr. Stephen St., 34	...	Cleansing.
Lr. Stephen St., 28	...	Cleansing and Limewashing.
Aungier St., 1	...	Gas Iron Heater Ventilated.
Clare St., 1	...	Cleansing.
Clarendon St., 35	...	Additional W.C. Provided.
Dame St., 29 & 30	...	Cleansing.
Mary St., 29	...	Overcrowding Abated.
Capel St., 55	...	Cleansing and Limewashing.
Capel St., 145	...	Cleansing.
Capel St., 53	...	Ventilated Passage Provided.
Wellington Quay (Dollard's)	...	Lighting, Ventilation and Doors Provided for W.C.'s.
Clarendon St., 14 (Jacob)	...	W.C. Cleansed.
King St., South (Heron, Connolly and Co.)		Drain Staunched and Intercepting Trap Fixed.
Aston's Quay (McBirney's)	...	Limewashing.
Aston's Place (McBirney's)	...	Limewashing and Lighting for W.C.'s.
Wicklow St., 18	...	Gas Iron Heater Ventilated.
Earl St., North, 23 & 24	...	Gas Iron Heater Ventilated.
Talbot St., 2	...	Suitable Sanitary Accommodation Provided.
Lr. Gardiner St., 48	...	Cleansing.
Molesworth St., 6	...	Limewashing.
Summerhill, 73	...	Cleansing.
Summerhill, 9 & 10 (Briscoe)	...	W.C. Partitioned off Shop.
Henry St., 46	...	Cleansing and Limewashing.
Abbey St., Upr. (Butler's)	...	W.C. Partitioned off Workroom
Marlboro' St., 21	...	Repairs and Limewashing.
Stafford St., 31	...	W.C. Provided for Females.
Yarnhall St., 3	...	Ventilated Space Provided.
Lr. Camden St., 55	...	Limewashing.
Denmark St., 36-39	...	Limewashing.
Cook St. (Siddal & Hilton's)	...	W.C. Removed to more Suitable Position.
Merchant's Quay (Siddal and Hilton's)		Ventilation Provided.

Situation of Premises.	Nature of Work Carried Out.
Liffey St., Lr. (J. Mara's) ...	Proper W.C. Accommodation Provided.
Temple Lane, 12 ...	W.C. Removed to more Suitable Position.
Cecelia St. (R. Allen's) ...	W.C. Removed to more Suitable Position.
Yarnhall St., 3	Ventilated Passage Provided.
High St. (Dublin Shirt Co.) ...	Ventilated Passage Provided, and Doors Fixed on W.C.'s.
North King St., 172 ...	Bakehouse Cleansed.
North King St., 112 ...	Limewashing.
Nassau St , 4 ...	Cleansing.
Leinster St., 5 ...	Repairs to W.C.
North Frederick St., 17 ...	Proper Waste Pipe Provided in Bakehouse.
Rutland Ave., Dolphin's Barn (X.L. Laundry)	Repairs carried out.
Duke St. (Colclough's) ...	Partition of W.C. Raised to Ceiling.
Dame St. (Chas. Chambers) ...	Limewashing.
James St., 51 ...	Limewashing and Cleansing.
Up. Kevin St., 1 ...	Cleansing.
Up. Kevin St., 14 ...	Cleansing.
Up. Clanbrassil St., 56 ...	Cleansing.
Lr. Kevin St., 40 ...	Cleansing.
Charlemont St., 72 ...	Cleansing.
Lr. Liffey St., 12 ...	Repairs and Cleansing.
Bachelor's Walk, 5 ...	Improved Ventilation and Cleansing.
Bachelor's Walk, 19 & 20 ...	Cleansing.
Lr. Bridge St., 22 ...	Limewashing and Cleansing.
Windmill Lane (Tonge & Taggart)	Flush for W.C. Provided and Improved Ventilation.
Aungier St., 30 (W. H. Rosenberg)	W.C.'s Repaired and Cleansed.
Exchequer St., 18 (Model Gown Co.)	Improved Ventilation.

Situation of Premises.	Nature of Work Carried Out.
Merchants' Quay (Irish Tobacco Co.)	W.C.'s Ventilated.
Swift's Row (Irish Brace Manufacturing Co.)	Cleansing.
Sth. Richmond St., 44 ...	Cleansing.
Harcourt St., 6 (Sirdar Rubber Co.)	Cleansing.
Stephen's Green, 140 (A. Betts)	Limewashing.
Molesworth St., 46 ...	Cleansing.
Dawson St., 45 ...	Cleansing.
Mayor St., Upr. (British Petroleum Oil Co.)	Sanitary Accommodation Provided.
Wicklow St., 26 ...	Overcrowding Abated.
Aungier St., 19 ...	Cleansing.
Dame St., 11 ...	Limewashing.
Dame St., 4 ...	Overcrowding Abated.
Dame St., 13 & 14 ...	Limewashing.
Fleet St., 9 ...	Limewashing.
Wellington Quay, 8 ...	Men's Workshop Cleansed.
Wellington Quay. 22	Men's Workshop Cleansed.
Fleet St., 5	Cleansing.
Parliament St., 37 ...	Cleansing.
Dame St., 68 ...	Limewashing.
Dame St., 3 ...	Cleansing.
Fade St., 13 (Conway Cycle Co.)	Limewashing.
South Great George's St., 47 ...	Additional W.C. Accommodation Provided.
South Great George's St., 22 ...	Bakehouse Cleansed.
South Great George's St., 6 ...	Staircase Cleansed.
Ardee St. (Plunkett & Co.) ...	Party Wall Repaired.
Fleet St. (West & Son) ...	Limewashing.
Merchants' Quay (Page & Son)	W.C. Cleansed.
Eustace St., 3 ...	Limewashing.
Mary's Abbey (Miss Boylan) ...	Roof Repaired.
Stafford St. (O'Dea & Co.) ...	Ventilation.
Chancery St., 25 ...	Cleansing.
Lr. Pembroke St., 10 ...	Windows Glazed.
Cork St., 39B ...	Gas Iron Heater Ventilated.

Situation of Premises.	Nature of Work Carried Out.
Cope St. (J. & L. F. Goodbody)	Ventilated Passage Provided.
Eden Quay, 5 ...	Windows Repaired and Glazed.
Cuffe Lane (Kilkenny Woodworkers)	Separate Sanitary Accommodation Provided.
Lr. Mercer St., 22 ...	W.C.'s Screened off Workshop.
Mary St., 31 (Miss Kearney) ...	Walls of Workshop Repaired.
Drury St. (Pim Bros.) ...	Limewashing.
Mary St., 2 ...	Alterations and Cleansing.

Re OUTWORKERS, 1908.

126 Firms sent in their lists twice in the year.
9 Firms sent in their lists only once in the year.
There were 793 Outworkers returned on the February lists, and 846 returned on lists for August, making a total of 1,639 Outworkers for the year 1908.

The attached list gives the number of Outworkers for each of the trades given.—(Home Work Order of 15th August, 1905) :—

	1908.
a. Making, cleansing, altering, repairing, &c., of wearing apparel, ...	1,540
b. Making, &c., &c., of lace curtains and nets . .	17
c. Cabinet and furniture making and upholstery work, .	28
d. Making of electro-plate, ...	15
e. Making of files, ...	
f. Fur pulling, ...	
g. Making of iron and steel anchors and grapnels, . .	
h. Making of iron and steel cables and chains, . .	
i. Making of cart gear, swivels, rings, buckles, loops, mullin bits, hooks, &c., ...	2
j. Making of locks, latches, and keys, . . .	2
k. Making or repairing umbrellas, sunshades, parasols, or part thereof, ...	7

l. Making of artificial flowers,	9
m. Making of nets other than wire nets,	
n. Making of tents,	
o. Making or repairing of sacks,	
p. Covering of racquet or tennis balls,	
q. Making of paper bags,	7
r. Making of boxes or other receptacles or parts thereof, made wholly or partially of paper, cardboard, chip, or other material,	
s. Making of brushes,	5
t. Pea picking,	
u. Feather sorting,	
v. Carding, boxing, or packeting of buttons, hooks and eyes, pins, and hairpins,	
w. Making of stuffed toys,	7
x. Making of baskets,	
y. And any process incidental to the above,	
Total,	1,639

It is rather extraordinary that of the 25 occupations carried on by outworkers only 11 are carried on out of factories in Dublin.

SHOP HOURS CLOSING ACT.

Under the Shop Hours Act, 1904, a Closing Order was made affecting Shops in which the business of barber and hairdresser is carried on. The Order included the granting of a half-holiday (from 3 o'clock) on Mondays, or (as an alternative) on Saturdays, as well as requiring the closing on Tuesdays and Wednesdays at 8.30 p.m., Fridays, 9 p.m., and Saturdays at 11 p.m.—those closing at 3 o'clock on Saturday being allowed to remain open till 8 p.m. on Mondays. Prosecutions have taken place in a few instances, but, generally speaking, the Order

has been well observed by the trade. Previously a large number of the barbers' shops remained open from 7 a.m., to 11 p.m. on the first five days of the week, and on Saturdays even to 1 o'clock a.m.

DANGEROUS SHELL-FISH.

I was the first to point out the possibility of typhoid fever being contracted by eating uncooked Oysters taken from sewage-polluted beds. That was so far back as 1881 in a paper read before the meeting of the British Medical Association, Cambridge. My paper was based on the fact that I had detected great numbers of sewage micro-organisms in the oyster "layings" or beds, at Clontarf. If water containing sewage might cause typhoid fever, why might not oysters impregnated with sewage cause that disease. Since then numerous cases of typhoid fever and of gastro-enteritis have been traced to the use of oysters. The oyster "layings" at Clontarf have been discontinued by the Port and Docks Board on my recommendation.

When the Dublin main drainage system has been completed by the inclusion of the annexed Townships in it, and when the sewage of Rathmines, Pembroke, Blackrock is treated similarly to that of Dublin, oysters might safely be cultivated in Dublin Bay.

Large quantities of mussels and cockles are gathered on the Southern side of the Bay between Irishtown and Blackrock. Formerly this part of the Bay was much flooded with sewage, but the

combined sewage of Rathmines and Pembroke Townships, formerly spread over the foreshores, is now discharged into the Bay on the North side of the Pigeon House wall. The cockles and mussels are now gathered from parts of the Bay much less polluted than formerly, but yet not quite free from pollution.

The following leaflet (and its equivalent in poster form) was widely distributed in 1908 :—

CORPORATION OF DUBLIN.

Public Health Committee.

A WARNING.

It is proved that Mussels and Cockles eaten raw may cause serious and even fatal disease. In order to destroy any germs of disease that they might contain if taken from polluted shores they should be boiled before being eaten.

CHARLES A. CAMERON,
Medical Officer of Health.

June, 1908.

THE DISINFECTING DEPARTMENT.

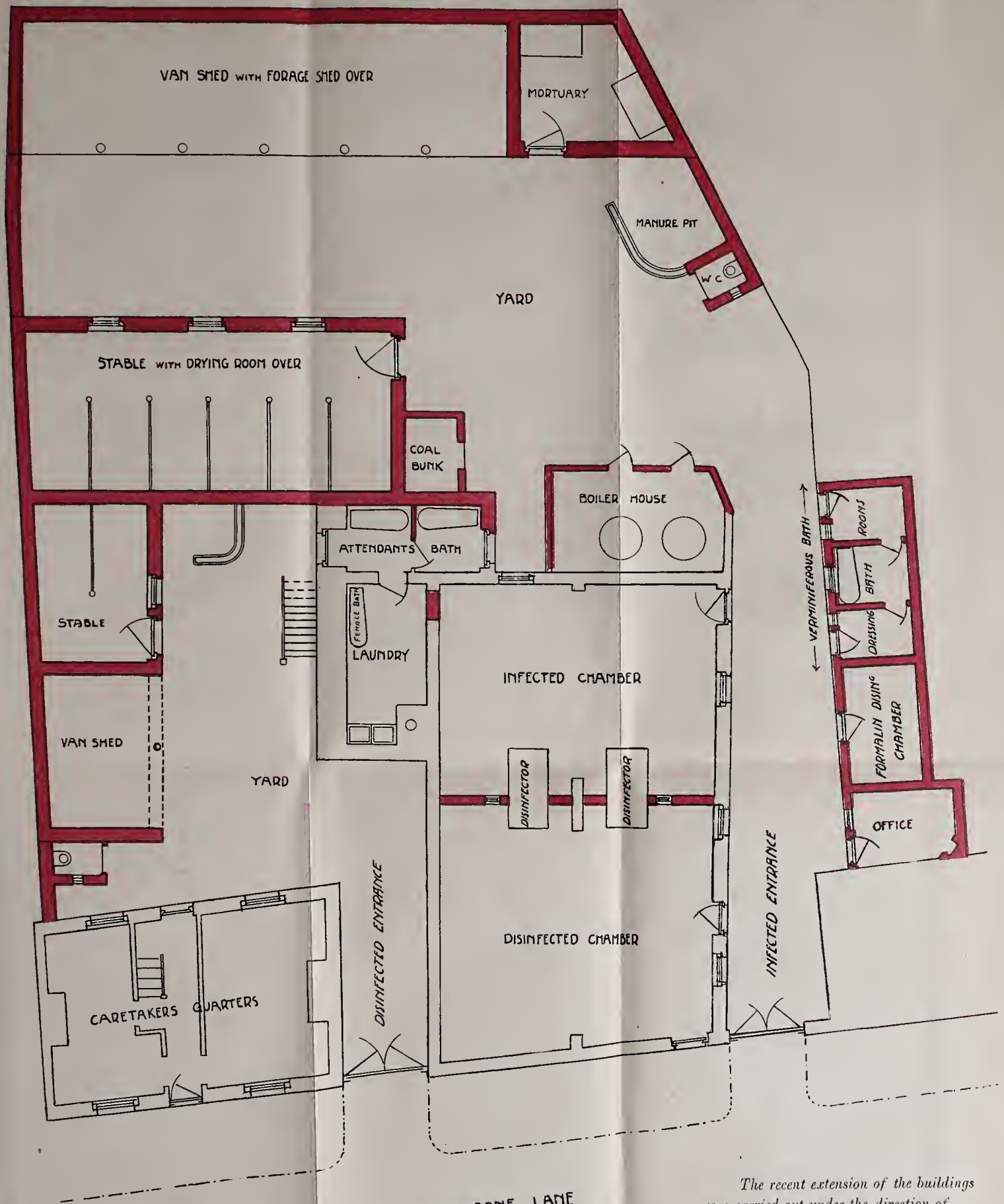
The staff in this Department is under the superintendence of a very zealous officer, Mr. Henry O'Kelly Egan, M.R.I.P.H. It is a well equipped one, and Medical Officers of Health of English and Scotch towns who have inspected it have praised it highly. The disinfection of infected articles is carried on at the Marrowbone Lane Depôt. There are two disinfecting apparatus—the Washington Lyon high pressure steam apparatus and the Thresh low

DISINFECTING DEPOT,

MARROWBONE LANE.

Scale : 8 feet = 1 inch.

NOTE.—The walls coloured Black are those of the original dwelling-house and store. The walls coloured RED are those of the additions which were made when the buildings were converted into the Disinfecting Establishment.



The recent extension of the buildings was carried out under the direction of

C. J. MacCARTHY,
City Architect,
December 16, 1908.

GROUND PLAN.

pressure disinfector. Both are fitted with ingenious physical arrangements by which the temperature of the interior parts of the apparatus can be determined and recorded. Disinfection is free to rich and poor alike. Baths for "verminiferous" persons and for persons affected with itch have recently been erected at the Depot. 47 persons used these baths in 1908. The plan of the Disinfecting Depôt will show the general arrangement of the premises. No person connected with the Department in which disinfection is carried out is allowed to come in contact with the persons who receive the disinfected articles and the persons who return them to their owners. The horses and vehicles in what I may term the purified articles department, are kept apart from the horses and vehicles used in conveying articles to the Depôt.

There was a slight increase in the number of rooms disinfected after occupation by consumptives; the number being 434 in 1907, and 455 in 1908.

The Tuberculosis Prevention (Ireland) Acts of 1908, comes into operation on the 1st July, 1909. Part I. of the Act may or may not be adopted by the Sanitary Authorities. Nearly all the earlier Acts relating to sanitation were those in which the word "may" instead of "shall" occur; those Acts were more or less inoperative. It is to be regretted that the word "may" should occur in Part I. of the new Act, as in that Part compulsory notification of pulmonary consumption is exacted. Without compulsory notification of pulmonary tuberculosis, attempts to lessen the ravages of that formidable disease will not be very successful.

TABLE SHOWING THE WORK DONE BY THE DISINFECTING DEPARTMENT IN THE YEARS 1902 TO 1908.

Year	Dwellings Dis-infected	Rooms Dis-infected	Rooms Dis-infected after Con-sumption	Rooms Lime-washed	Removals of Clothing, &c.	Articles Dis-infected	Persons whose Clothes, &c., have been Dis-infected	Patients removed to Hospital	Dis-infected Articles Washed	Mattresses Burned and Replaced	Beds Burned and Replaced	Total Items of Service
1902	1,703	2,313	—	1,422	3,633	91,965	2,660	1,281	2,615	209	487	108,288
1903	1,512	2,344	—	1,485	2,269	122,859	6,541	2,463	4,528	494	522	145,017
1904	847	997	132	771	2,012	53,189	1,361	937	1,658	220	107	62,240
1905	929	1,577	305	774	2,296	50,917	2,401	797	2,416	339	148	63,899
1906	805	1,232	312	786	2,231	50,409	2,244	889	4,934	294	172	64,213
1907	1,008	1,320	434	757	2,653	65,641	1,636	814	7,508	389	189	82,349
1908	*2,197	1,592	455	872	3,050	67,283	1,929	837	7,141	369	179	85,904

* Including 850 houses in Clontarf, the sanitary accommodation and drains of which were flushed with disinfecting solutions. This was done as a sanitary precaution during the typhoid epidemic already referred to.

Corporation Baths and Wash-Houses, Tara Street.

The Corporation Baths and Wash-Houses are under the intelligent management of Mr. John P. O'Brien, who has been the manager since the foundation.

The Baths and Wash-House returns, for the year ended the 31st. of December, 1908, show that 128,886 persons visited the establishment. The receipts were £1,454 13s. 11d., being a reduction on the previous year's income of £12 5s. 1d.

The number of visitors, however, show an increase when compared with the returns for last year of 2,292 persons. The apparent paradox is explained by the increased number of visitors to the Second Class Swimming Bath—juveniles, admitted at the nominal charge of one penny per visit.

There was a falling off in the number of visitors to the Private Reclining Baths, the reduction was confined to the First Class Department.

The Public Wash-House also showed a reduced attendance.

The 128,886 visitors to the Baths and Wash-House is made up as follows :—Swimming Baths—total, 61,197; males, 59,956; females, 1,241. Reclining Baths—total, 40,088, of whom 7,346 were women. Wash-House—21,993 visitors. Gymnasium—5,585 visitors; 4,151 male and 1,434 female.

The decrease in the number of women frequenting the Wash-House during the past year, is, principally, due to the opening of the Public Wash-House in Francis Street. This Laundry—the gift

of Lord Iveagh to the Corporation of Dublin—is constructed and fully equipped in accordance with up-to-date requirements, 40 women can wash concurrently. Centrifugal machines, driven by steam, and entirely controlled by male attendants, practically wring the clothes dry, so that all the visitors have to do is to hang their garments for a few minutes in the hot chamber, and the clothes are ready for mangling or ironing. Naturally poor women hasten to avail themselves of such splendid accommodation. In the 20 washing compartments in Tara Street, the troughs, and their fittings, are completely worn out; the drying closet taking two hours or more to render the articles placed therein fit for wear. A state of affairs that surprises no one aware of the fact that, on an average 25,500 visitors have made use of the convenience in the Tara Street Wash-House every year since the establishment was opened (May, 1885).

The visitors to the Swimming Baths comprised, in addition to the members of the general public, 2,192 recruits from the Depot of the Royal Irish Constabulary, admitted at a charge of 2d. per man per visit, and 1,318 troopers of the 11th Hussars.

The aquatic classes, visiting the Baths after the usual closing hour, were boys of the Post Office Institute, Young Men from the Harding Home, Lord Edward Street; The Rail and Steam Packet Men's Union; The Dublin University Swimming Club; and the Life Saving Class connected with the Dublin Metropolitan Police.

The Premier Ladies' Swimming Club and the ladies forming the Sackville Hall Swimming Class

attended at 8 o'clock in the evening. The young women assembling at this hour necessitated the cessation of ticket issuing to the First Class Swimming Baths, and also to the First Class Private Reclining Baths at, at least, one hour before the proper or usual time for closing the ticket office, thereby entailing a very considerable pecuniary loss to the revenue derivable from the visitors to this department, besides causing annoyance to would-be bathers of the 6d. and 4d. Class, as very few of them were inclined to accept the Superintendent's invitation to allow themselves to be accommodated in the Second Class department. The advent of the second ladies' swimming class coincided with the serious reduction in the number of First Class tickets sold during the year, compared with the figures for the previous year, the falling off amounted to 1,905 6d. bathers, or £47 12s. 6d. revenue. Mr. O'Brien, the Superintendent, suggests that no aquatic class should be admitted to the Baths until 9 o'clock p.m.

The Royal Irish Constabulary Swimming Class, which for the past five years have made tri-weekly visits to the Baths during the entire year, ceased to attend in February, and did not resume practice until the month of May, this in consequence of a number of the recruits being laid up with severe colds, etc.

The Constabulary authorities noticed the Superintendent of the Baths that they would not require the Baths in future during the winter months, and giving as a reason the prevalence of sickness amongst the young policemen attending the swim-

ming lessons. 5,148 visitors from the R.I.C. paid for admission during the year 1907, £42 18s. 0d. was the amount received for the accommodation afforded.

The " Gymnasium " was used by the members of the Dublin Physical Culture Society to the number of 5,585 persons, 1,434 of the visitors were lady members. The receipts came to £53 16s. 6d., including £6 5s. 0d. received for dances, held from 8 o'clock p.m. until 1 or 2 o'clock next morning.

The Public Health Committee directed the closing of the Swimming Baths from the 31st of October until the 1st of April. Outside of the patronage of military and constabulary, there is no adequate demand for Swimming Baths in Dublin during the winter months. The closure has affected a very considerable saving in cost of fuel, light and wages. The Committee had also in view the bettering of the conditions under which the attendants carried out their duties. The constant moisture in the bathing halls, due to the vapour arising from a large body of superheated water had a very bad effect upon the health of the staff. Three men employed in the Baths having died from consumption within a period of 12 months.

SUMMARY.

RETURN for 12 Months ended 31st December, 1908.

Department	Male	Female	Both Sexes	Receipts £	s.	d.
Swimming Baths ...	59956	1241	61197	519	9	4
Reclining Baths ..	32742	7346	40088	759	18	2
Wash-Houses ...	—	21993	21993	119	12	3
Gymnasium ...	4151	1434	5585	53	16	6
Commission on Slot Machine	—	—	—	1	17	8
Totals for the year ...	96849	32014	128863	£1454	13	11

Returns from Baths and Wash Houses, Tara Street, for Year ended 31st December, 1908.

Class of Accommodation	January		February		March		April		May		June		July		August		September		October		November		December		Total of Visitors in each Class during the year	Remarks
	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.		
1d. Spectator's Tickets ...	—	—	—	—	—	—	—	—	—	—	—	—	26	—	21	—	22	—	7	—	—	—	—	—	76	
4d. Men's Swimming ...	239	—	374	—	467	—	843	—	2231	—	2162	—	2412	—	1813	—	1295	—	1046	—	Closed		Closed		12882	
2d. Men's do. ...	Closed		Closed		Closed		Closed		1803	—	1705	—	2191	—	1159	—	273	—	8	—	—	—	—	—	7139	
2d. Boys' do. ...	88	—	189	—	292	—	612	—	1145	—	821	—	1095	—	1032	—	799	—	711	—	—	—	—	—	6784	
1d. Boys' do. ...	Closed		Closed		Closed		Closed		4189	—	4257	—	7314	—	6258	—	1653	—	10	—	—	—	—	—	23681	
3/6 Discount do. ...	1 book 12	—	1 book 12	—	1 book 12	—	1 book 12	—	2 books 24	—	1 book 12	—	—	—	—	—	2 books 24	—	—	—	—	—	—	—	9 books 108	
1d. Gymnasium do. ...	210	18	262	35	180	42	—	—	252	—	110	—	—	—	—	—	—	—	340	41	260	—	—	—	1750	
3d. Club do. ...	51	—	72	—	62	—	50	—	220	—	162	—	209	—	251	—	327	—	184	—	Closed		Closed		1588	
Aquatic Classes ...	—	—	—	—	—	—	3 visits 90	—	11 visits 338	7 visits 210	12 visits 410	8 visits 260	14 visits 576	8 visits 275	10 visits 440	4 visits 160	10 visits 440	5 visits 200	7 visits 280	—	—	—	—	—	97 visits 3679	
Royal Irish Constabulary	329	—	90	—	—	—	—	—	—	—	327	—	279	—	308	—	364	—	495	—	—	—	—	—	2192	
11th Hussars	220	—	146	—	247	—	289	—	189	—	91	—	136	—	—	—	—	—	—	—	—	...	—	—	1318	11th Hussars left Ireland in August.
6d. Hot Baths ...	1229	38	1402	53	1348	20	1501	30	2217	65	1779	77	1684	75	1567	63	1563	35	1764	53	1294	33	1134	25	19048	
3d. do.	756	383	887	413	897	384	1106	458	1930	600	1700	585	1631	603	1473	464	1115	461	1259	434	766	301	644	293	19553	
1d. Cold do.	—	—	—	—	—	—	—	13	—	—	—	—	—	—	—	—	—	—	—	—	—	...	—	—	13	
5/- Discount	1 book 12	—	1 book 12	—	—	—	—	—	3 books 30	—	—	—	—	—	—	—	1 book 12	—	—	—	1 book 12	—	1 book 12	—	8 books 96	
Hebrew Women's "Special Bath"	—	120	—	115	—	116	—	127	—	114	—	110	—	103	—	112	—	121	—	123	—	99	—	117	1377	
Manglers and Washers ...	—	2012	—	1829	—	1849	—	1952	—	1959	—	1904	—	2150	—	1659	—	1698	—	1864	—	1581	—	1536	21993	
Gymnasium visitors ...	510	255	490	160	540	192	240	180	Closed		Closed		Closed		Closed		Closed		590	102	1160	310	621	245	5585	
Total Visitors for each Month	6472		6541		6658		7503		17522		16472		20759		16780		10402		9311		5816		4627		Total of Visitors 128863	
Total of Receipts from Visitors for each Month	£ s. d. 75 15 7		87 3 0		90 6 8		97 15 1		192 1 6		171 19 10		196 8 8		161 2 11		129 4 2		117 16 0		73 13 5		61 7 1		Total of Receipts 1454 13 11	

RETURN OF NEW BUILDINGS AND BUILDINGS UNDERGOING EXTENSIVE ALTERATIONS DURING YEAR ENDED DEC. 31st, 1908.

Street and Number.	Number of Buildings.	Description of Building.
Abbey St., Lr., Nos. 32 & 33 ...	2	Alterations.
Achill Road, Drumcondra, 5 & 7, 11	3	Dwellinghouses.
Abbey St., Lr., 7, rere of ...	1	Addition.
Arran Road, 1 & 3 ...	2	Dwelling-houses.
Addison Place, Glasnevin, 1 to 5	5	do.
Aungier St., Nos. 52 & 53 ...	2	Additions.
Aungier St., No. 11 ...	1	Alterations.
Abbey St., rere of Abbey Theatre	1	Addition.
Blackhall Place, No. 10 ...	1	Alterations.
Bishop St., No. 26 ...	1	Factory Chimney.
Beechfield Tce., Vernon Avenue, 10 & 11	2	Dwelling-houses.
Ben Edair Road, No. 45 ...	1	Store Building.
Bow Bridge, No. 4 ...	1	Alterations.
Bishop St., Nos. 18 & 19 ...	2	do.
Bonny's Lane, Nos. 8, 9, & 10 ...	3	Dwelling-houses.
Berkeley Road, No. 17 ...	1	Addition.
Bolton St., Nos. 31 to 34 ...	4	Alterations.
Blackhall St., No. 5, rere of ...	1	Addition.
Bolton St., No. 59 ...	1	Alterations.
Botanic Ave., Nos. 49, 51, 53, 55, 61, 63	6	Dwelling-houses.
Basin Quay, Grand Canal ...	1	New Boundary Wall.
Blessington Court ...	1	Workshop
Bow St., Nos. 45, 46 & 47 ...	3	Dwelling-houses.
Brunswick St., Gt., No. 200 ...	1	Alterations.
Blackhall Place, King's Hosp. ...	1	Addition.
Brunswick St., Nth., No. 68 ...	1	do.
Conyngham Road, No. 19 ...	1	Additions.
Coppinger's Row, No. 4 ...	1	New Front Wall.
Conyngham Rd., No. 26 ...	1	Alterations.
Cork St., rere of Nos. 110 & 111	2	Additions.

Street and Number.	Number of Buildings.	Description of Building.
Charles St., Nos. 31 & 32 ...	2	Alterations.
Camden Row, Nos. 4, 5 & 6 ...	3	Dwelling-houses.
Clanbrassil St., Upr., No. 13 ...	1	Shed Building.
Camden Row ...	1	New Chimney.
Clonliffe Road, "Duncan" Ter., No. 5	1	Dwelling-house.
Chapelized, "Liffey Bank" ...	1	New Club House.
Church Ave., Drumcondra, 13, 14, 15, 16, 17, 18	6	Dwelling-houses.
Connaught St., Nos. 83, 85 ...	2	do.
Constitution Hill, Temple Cottages, off, Nos. 24 to 27	4	do.
Coombe, Nos. 58 and 59 ...	2	Alterations to Yards.
Charlotte Quay ...	1	Factory Chimney.
Cabra Park, No. 34 ...	1	Addition.
Coombe, No. 87 ...	1	Shop Front.
Columbus Rd., Lr., No. 24 ...	1	Dwelling-house.
Capel St., No. 72 ...	1	Stable.
Claude Road, Nos. 13 and 14 ...	2	Dwelling-houses.
Clare Lane, rere of Leinster Club	1	Addition.
Chapelizod Church ...	1	do.
Claremont Ave., Gate Lodge ...	1	do.
College Green, No. 3 ...	1	Alterations.
Dame St., No. 50 ...	1	do.
Dame St., No. 42 ...	1	do.
Drumcondra Park, Nos. 14, 12 ...	2	Dwelling-houses.
Dame St., No. 35 ...	1	Alterations.
Dolphin's Barn, S.C.R., Clayton Cottage	1	Addition.
Dolphin's Barn, No. 27 ...	1	do.
Dame St., No. 49 ...	1	Alterations.
Dominick St., Upr., No. 44 ...	1	Addition.
Dolphin's Barn ...	1	Jewish Mortuary.
Dorset St., Lr., No. 25 ...	1	Shop Front.
Eccles Lane (Mater Hosp.) ...	1	Stable and Vegetable House.
Essex St., Dolphin Hotel ...	1	Alterations.
East Wall, Craigue House ...	1	Dwelling-house.
East Wall (Preston) ...	1	Barrel Washing Ho.

Street and Number.	Number of Buildings.	Description of Building.
East Wall, new Road off, Tenement, Nos. 53, 55, 57, 59, 61 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93, 95, 97, 99, 101, 103, 105, 107, 109 & 111.	15	Dwelling-houses.
Exchequer St., No. 30 ...	1	Alterations.
Erne St., Lr., No. 32a ...	1	Dwelling-house.
Emmet Rd., Richmond Dairy ...	1	Addition.
Emmet Rd., rere of Independent Cottage	1	Stable at rere.
Emmet Rd., Myra House ...	1	Addition.
Findlater's Place, Nos. 11 & 12...	2	New Addition to Warehouse.
Frederick St., Sth., No. 31 ...	1	Alterations.
Fairview Strand, Nos. 2 and 4 ...	2	Dwelling-houses.
Foley Street ...	1	Van Shed.
Fairview Strand, No. 46 ...	1	Dwelling-house.
Fownes St., No. 13 ...	1	Alterations.
Fairview Strand, Nos. 7, 8, 9 ...	3	Shops.
George's St., Sth. Gt., No. 44 ...	1	Addition.
George's Quay, Nos. 28-32 ...	1	Lean-to Roof.
Grantham St., Nos. 2 to 6, Camden Market	5	Dwelling-houses.
Grand Canal Basin ...	1	Building Wall.
Gloucester Place, No. 14½ ...	1	Shop.
Grand Canal, Rialto Bridge, Compton Cottage.	1	Addition.
Grantham St., St. Kevin's Schools	1	do.
Glasnevin, Bank Farm ...	1	Training College.
Gloucester St., Upr., rere of 7 ...	1	Addition.
Halston St., Sacristy R.C.C, ...	1	do.
Herbert Place, No. 11 ...	1	Stable
Henrietta St. ...	1	Warehouse Building.
Halliday Sq., Nos. 1 to 27 ...	27	Dwelling-houses.
Healy St., off Rutland Place, Nos. 1 to 8	8	do.
Henry St., No. 10 ...	1	Alterations.

Street and Number.	Number of Buildings.	Description of Building.
Harcourt St., No. 3½ ...	1	Additions.
Hanbury Lane, Nos. 22 & 23, rere	2	do.
Island Bridge, Dairy ...	1	do.
Iona Park, Nos. 5 and 7 ...	2	Dwelling-houses.
Inchicore, Canal Bank "Hermitage"	1	Addition.
Iona Road, "St. Anthony's," "Craighill," "Teac Ceoil."	3	Dwelling-houses.
Iona Road (Dillon) ...	2	do.
Iona Drive, Nos. 2, 4, 6, 16, 18, 20	6	do.
Iona Drive, Nos. 9, 11, 13 ...	3	do.
Inchicore, Golden Bridge House	1	Alterations.
James St., No. 49 ...	1	Additions.
King St., Nth., Nos. 153, 154, 155	3	Extensive Repairs.
King St., Nth., No. 16 ...	1	Alterations.
King St., Nth., No. 62 ...	1	New Front Wall.
Lindsay Road, Nos. 47, 51, 53, 55, 57, 61, 63, 65, 67, 69, 71	11	Dwelling-houses.
Lindsay Road, Nos. 62, 64, 66, 68, 72	5	do.
Leeson St., Lr., No. 18	1	Night Schools.
Lord Edward St. (Dockrell) ...	1	Temporary Building.
Liberty Lane, Nos. 11 & 12 ...	2	Dwelling-houses.
Lulleymore Ter., Nos. 16 to 21...	6	do.
Lemon St., rere of Princess Restaurant	1	Alterations.
Lombard St., W., Synagogue ...	1	Addition.
Meath St., No. 27 ...	1	Alterations.
Manor St., No. 44 ...	1	do.
Manor St., Nos. 45 & 45a ...	2	Dwelling-houses.
Merton Ave., S.C.R., Nos. 11 and 12	2	do.
Marlboro' St., Nos. 75 and 76 ...	2	New Warehouse.
Marrowbone Lane, No. 72 ...	1	Alterations.
Merrion Row, Nos. 2 and 3 ...	2	Additions.

Street and Number.	Number of Buildings.	Description of Building.
Mount Shannon Road, Nos. 18, 19, 20, 21, 22, 23, 24, 25, and 28	9	Dwelling-houses.
Marlboro' St., No. 93 ...	1	Shop Front.
Merchant's Quay, No. 17 ...	1	Additions.
Mary St., No. 43 ...	1	Alterations.
Mount Brown, No. 9 ...	1	Addition.
Molesworth St., No. 34 ...	1	Additions.
Nottingham St., No. 22 ...	1	New Office.
Nassau Street, No. 9a ...	1	Alterations.
Norfolk Road, Nos. 25, 27, 29, 31, 33, 35, 41, 43-50, 52, 54, 56, 58	13	Dwelling-houses.
Newmarket, No. 10 ...	1	Alterations.
Northbrook Ter., Nos. 28 & 8 ...	2	Dwelling-houses.
N.C.R., D.U.T.Co., Depôt ...	1	Additions.
Do., Do. ...	1	Alterations.
North Strand, Nos. 26 and 27 ...	2	do.
Oxmantown Road, Nos. 119 to 142, and 64 to 86	47	Dwelling-houses.
Primrose Ave., Nos. 27, 28, 29, 30, 31, 32, 33, 34, 36, and 37	10	Dwelling-houses.
Parkgate St., No. 26, rere of ...	1	Addition.
Parkgate St., No. 12 and 13 ...	2	do.
Peter's Row, Nos. 5 and 6 ...	2	Warehouse Building.
Prussia St., No. 1 ...	1	Alterations.
Prussia St., City Arms Hotel ...	1	New Sanitary Accommodation.
Phibsboro' Rd., No. 98 ...	1	Addition.
Peter St., Adelaide Hospital ...	1	Alterations.
Phibsboro' Rd., No. 47, A & B ...	2	Dwelling-houses.
Portland St. (Guinness) ...	1	Time Office.
Peter's Row (Jacob) ...	1	New Store.
Price's Lane, No. 5 ...	1	Addition.
Queen St., No. 78 ...	1	New Front Wall.
Richmond Road, No. 290 ...	1	New Hall.
Rotunda, Round Room ...	1	Alterations.
Ringsend Road, D.U.T.Co. ...	1	New Shed Building.
Ringsend Road, Richardson and Fletcher	1	do.

Street and Number.	Number of Buildings.	Description of Building.
Seville Lane, Nos. 10 to 13 ...	4	Dwelling-houses.
St. Kevin's Ter., New Bride St., Nos. 1 to 20	20	do.
S.C.R., No. 103 ...	1	Dwelling-house.
St. Columba's Road, No. 28 ...	1	do.
St. Michael's Lane, Nos. 28 and 29	2	do.
Sion Hill, Drumcondra (Two Houses)	2	do.
Summer Hill, rere of 70 ...	1	Alterations.
Sackville St., Lr., rere of 9 ...	1	do.
St. Augustine St., Nos. 78 and 80	2	do.
St. Stephen's Green, Nos. 102, 103 & 104	3	do.
St. Anne's Villas, S.C.R., Nos. 5 to 8	4	Dwelling-houses.
Susanville Rd., Nos. 5 and 7 ...	2	do.
St. Anne's Road, off S.C.R., Nos. 7 & 8	2	do.
Sandford Ave., Nos. 37 and 38 ...	2	do.
Spencer St., No. 10 ...	1	Addition.
Saunder's Court, off Annesley Place, Nos. 1 to 12	12	Dwelling-houses.
S.C. Road, No. 37 ...	1	Club Room.
Stanhope St. Schools ...	1	Addition.
Sackville St., Upr., "Gresham"	1	New Supper Room.
St. Helen's Ter., Philipsburgh Ave., No. 1	1	Shop Front.
Thomas St., No. 14 ...	1	Addition.
Tyrconnell St., Nos. 15, 17, 19, 21, 23 and 25	6	Dwelling-houses.
Tyrconnell St., Nos. 2, 4, 6, 8, 10, 12, 14, 16	8	do.
Turlough Ter., Nos. 16, 17, 18 ...	3	Shops.
Vera Ter., Botanic Ave., Nos. 5 to 8	4	Dwelling-houses.
Viceroy Ter., Cadogan Rd., Nos. 9 to 12	4	do.
Wolseley St., No. 19 ...	1	Additions.

Street and Number.	Number of Buildings.	Description of Building.
Walton Ter., West Rd., Nos. 5, 6, 7	3	Dwelling-houses.
Westmoreland St., No. 33 ...	1	Alterations.
Westmoreland St., No. 8 ...	1	do.
Westmoreland St., No. 28 ...	1	Addition.
Windmill Lane, E. and S. ...	1	Warehouse.
Wellington Quay, No. 33 ...	1	Alterations.
Wellington St., No. 21 ...	1	do.
Wellesley Place ...	1	Shed Building.
William St., Nth., Canal Bank ...	1	New Schools.
Total, ...	469	

RETURN OF SANITARY OPERATIONS FOR 1908.

	No.
Inspections of Tenement Houses	77,621
Inspections of other Houses	32,788
Inspectors of Rooms in Tenement Houses	195,164
Inspections of Common Lodging Houses—Daily ...	1,483
Inspections of Rooms in other Houses	1,183
Inspections of Common Lodging Houses—Nightly ...	251
Inspections to Detect Overcrowding—Nightly ...	141
Inspections of Yards, Halls and Stairs of Tenement Houses	5,343
Inspections of Factories and Workshops	5,949
Inspections of Bakeries	174
Inspections of Outworkers' Premises	1,118
Inspections of Laundries	112
Inspections of Ice Cream Shops	52
Inspections of Fried Fish and Chip Potato Shops ...	12
Inspections of Slaughter Houses	932
Inspections *re* Rebate of Rates	4,892
Inspections of Piggeries	708
Inspections of Stables	466
Inspections of Marine Stores	66
Inspections of other Offensive Trades	461
Inspections of Whirligigs and Swinging Boats ...	2
Inspections of Schools	87
House Drains Constructed	228
House Drains Repaired	379
House Drains Cleansed	4,120
Water Closets Constructed	451
Water Closets Repaired	1,599
Privies Constructed	7
Privies Repaired	77
Privies Abolished	29
Ashpits Constructed	16
Ashpits Repaired	174
Ashpits Abolished	111
Dustbins Supplied	784
Dwellings Repaired	3,924

	No.
Dwellings Cleansed—Stairs, Landings and Passages ...	4,807
Dwellings Limewashed Twice—Tenement	10,256
Rooms Limewashed Twice in Tenement Houses ...	60,141
Other Houses Limewashed	524
Rooms in other Houses Limewashed	912
Dwellings Closed	47
No. of Rooms in Closed Houses	224
Rooms in other Houses Closed	2
Kitchen Dwellings Closed	3
Cellars Closed	7
Yards and External Premises Cleansed	3,479
Yards Concreted	705
Lanes and Alleys Cleansed by Private Parties ...	122
Waste Plots of Ground Fenced in	16
Pigs Removed	51
Manure Removed	202
Reconstruction of Piggeries	3
Nuisances from Smoke Abated	119
Rooms in Tenement Houses Cleansed	4,217
Rooms in other Houses Cleansed	144
Defects in Chemical Works Remedied	2
Defects in Manure Works Remedied	2
Overcrowding Abated	31
Other Classes of Defects Remedied	966
Total Sanitary Defects Remedied	26,114
Houses Re-opened	15
Tests applied to New Drains	849
Old Drains Tested	901
Cross Drains Tested	288
Single Private Drains Examined	73
Single Private Drains Reconstructed	6
Single Private Drains Reconstructed by Private Parties...	6
Additional W.C. Accommodation Provided for Factories and Workshops	6
Separate W. C. Accommodation for each Sex Provided in Factories and Workshops	12
Ventilated Passage Provided between Workshops and W.C.	16
Overcrowding of Factories and Workshops Abated ...	6

	No.
Factories and Workshops Repaired	28
Factories and Workshops Cleansed	64
Factories and Workshops Limewashed	28
Marine Stores Closed	1
Marine Stores Limewashed	2
Marine Stores Repaired	1
Reports to City Engineer of Apparently Dangerous Structures	565
Reports Received from Medical Officers of Health ...	560
Advice by Lady Inspectors *re* Domestic Management ...	1,122
Advice by Lady Inspectors *re* Feeding of Infants ...	924
Advice by Lady Inspectors *re* Children Left Alone in Rooms	406
Advice by Lady Inspectors *re* Personal Cleanliness ...	90
Advice by Lady Inspectors *re* Ventilation	140
Advice by Lady Inspectors *re* Cleansing of Rooms ...	81
Advice by Lady Inspectors *re* Cleansing of Children ...	104
Advice by Lady Inspectors *re* Misuse of Sanitary Accommodation and Dustbin	21
Advice by Lady Inspectors *re* Dirty Rooms	959
Advice by Lady Inspectors *re* Care of Delicate Persons	307
Advice by Lady Inspectors *re* Beds and Bedding ...	869
Notices Served *re* Tenement Houses. Section 110 ...	7,735
Notices Served *re* other Houses	344
Notices Served *re* Dirty Rooms in Tenement Houses ...	163
Notices Served *re* Dirty Rooms in other Houses	16
Notices Served under Section 19, Dublin Corporation Act, 1897	18
Notices Served under 41 & 42 Vic., c. 52, sec. 56 ...	77
Notices Served under 41 & 42 Vic., c. 52, sec. 51; and 53 & 54 Vic., c. 59, sec. 19	13
Notices Served with respect to Factories and Workshops	200
Notices Served *re* Bakeries	12
Notices Served *re* Outworkers	44
Notices Served *re* Laundries	1
Total Number of Notices Served under Factory and Workshop Act, 1901	257
Notices Served *re* Schools	9
Notices Served *re* Offensive Trades	15

	No.
Notices Served *re* Slaughter House Bye-Laws ...	9
Notices Served *re* Common Lodging House Bye-Laws ...	1
Notices Served *re* Overcrowding	32
Notices, Verbal	7,300
Notices, Verbal, Complied with	7,199
Notices Served *re* Waste Ground	2
Notices Served *re* 53 & 54 Vic., c. 59, sec. 27	16
Notices Served *re* 41 & 42 Vic., c. 52, sec. 83 and 84 ...	2
Notices Served *re* Tenement Bye-laws	2,092
Notices Served *re* Offensive Trades	15
Total Number of Notices Served	10,816
Total Number of Notices Complied with	9,890
Number of Tenement Houses to which Notices refer ...	2,636
Number of other Houses to which Notices refer ...	1,115
Summons issued under 41 and 42 Vict. Cap. 52, Sec. III.	824
Summonses under Section 56 do.	2
Summonses for Breaches of Tenement Bye-laws ...	787
Summonses under Section 53 & 54 Vic., c. 59, sec. 21 ...	10
Summonses *re* Dirty Rooms in Tenement Houses ...	21
Summonses for Disobedience of Orders of Abatement ...	110
Total Summonses issued under Factory and Workshop Act, 1901	6
Summonses for Breaches of Common Lodging House Bye-laws	16
Summonses for Breaches of Footway and Cleansing Bye-laws	96
Total Number of Summonses	1,872
Total Number of Magistrates' Orders Obtained ...	559
Number of Tenement Houses to which Summonses refer	1,429
Number of other Houses to which Summonses refer ...	68

Penalties with respect to Ordinary Sanitary Offences, Workshops, etc.	£186	1	2
Costs	£128	0	9
Total Fines and Costs imposed	£314	1	11

VETERINARY DEPARTMENT.

This is one of the most useful departments of the Sanitary Authority. It is under the direction of an able veterinarian, Mr. Andrew Watson, M.R.C.V.S.

EXAMINATION OF UDDERS OF COWS FOR TUBERCULOSIS OF THAT ORGAN.

During the year 1,426 cows were examined, and the following was the result :—

Suspected cases of tuberculosis (Fat Cattle)	5
Abscesses varying from that known as milk boil (furunculus) to the envolving of one or more quarters ...	75
Samples of suspected milk taken	4
Mastitis, including interstitial parenchymatous and phlegmonous	11
Fibrous thickening irregularly distributed over the cuticle of the udder, and involving the subcutis and interstitial connective tissue	14
Masses irregular in contour, and where no acute inflammation was present, and in which tubercle might be the initial factor	9
Ulcerated Teats	10

Four samples of milk from suspected udders were examined microscopically. The bacillus was not detected in any of them. As pointed out by Principal Mettam, B.Sc., of the Royal Veterinary College of Ireland, that "this, however, must not be taken as proving that tuberculosis was not present in these special cases. An udder that is tuberculous may not on a certain day be giving affected milk. The conditions of the secretion will depend on the nature of the lesion, as to its age, extent, changes undergone in the part, etc. The fact that

a given specimen of milk is free from tubercle bacilli does not necessarily indicate that the udder is free from tuberculous infection; it merely shows that the sample in question did not contain the virus." In all cases were disease existed in the udder, the milk was interdicted for consumption; nor was it allowed to be given to the lower animals, until it was boiled, as will be seen by the notice served in each case, of which the following is a copy :—

"Take notice that under the provisions of the Bye-Laws made by the Right Hon. the Lord Mayor, Aldermen and Burgesses of Dublin, acting by the Town Council, as the Local Authority for the City of Dublin, under the Contagious Diseases (Animals) Acts, 1878 to 1886, and the Dairies, Cowsheds, and Milkshops (Ireland) Orders, 1879. The Dairies, Cowsheds, and Milkshops, Ireland, Order of July, 1886, and the Dairies, Cowsheds, and Milkshops Amending Order, 1900, the aforesaid local authority are satisfied that you have a cow suspected of disease in aforesaid yard, hereby give you notice that the milk of said suspected cow shall not be mixed with other milk, nor sold or used for human food, nor shall it be sold or used for the food of swine, or other animals, unless or until it has been boiled, until you hear further from this department.

"Public Health Office,
"11*th March*, 1908."

REGISTRATION OF DAIRIES, ETC.

The number of application forms for re-registration of Dairies, etc., sent in in compliance with Dairy Regulations during the month of January, 1908, amounted to no less a number than six hundred and twelve, all of which were entered on Register.

The number of new Registrations received during the year amounted to 184, which were as follows :—

Transfers, Dairy Yards, North	... ...	14
,, ,, South	... ...	11
New Yards, North	... ...	2
,, South	... ...	2
		29

Purveyors, North	... ...	67
,, South	... ...	68
		135

Purveyors, outside, North	... ...	8
,, ,, South	... .	12
		20

Dairies closed during 1908:—

Purveyors, North	... ...	23
,, South	... ...	10
		33

Yards, North	... ...	2
,, South	... ...	5
		5

Purveyors, outside, North	...	...	...	...	3
,, ,, South	...	...	...	...	5
					8

The number of inspections made by Dairy Inspectors were as follows :—

Dairy Yards	...	...	12,721
Dairies and Milkshops	...	...	17,805
Number of Notices Served		...	708

Fifteen summonses for violation of Reguations were brought before the Magistrates. Convictions were obtained in all cases. Fines and Costs were imposed, amounting to £6 9s. 2d.

During past year (1908) eight cases of infectious disease were notified from dairies within City Boundary; immediate action was taken in each case. The dairy was immediately closed, all milk found in same destroyed, and the premises, etc., disinfected. The sale of milk was not allowed to be resumed in same till medical certificate was submitted, stating that all danger to, or contamination of milk stored or exposed for sale had passed away.

The question of clean milk coming into the City was one which has received considerable attention on the part of the Dairy Staff during the past year, Inspectors being detailed specially to meet the early morning and evening trains for the purpose of examining milk in cans coming by rail. In consequence of an Inspection at one of the Southern stations on 8th June, 1908, disclosing the fact that sufficient care was not evidently paid to milk sent into City, the Chief Inspector called upon several of

the largest firms in the city and notified to them the condition of affairs, and the action about to be taken to remedy the evil. He suggested to each of the firms that they would send circulars to the persons in the country, sending milk into Dublin, to be more careful in future. A copy of such letters was sent into Public Health Committee.

This has, I am satisfied by latter examinations, had a good effect, but much more care upon the part of those sending milk from the County Districts is absolutely essential to ensure clean milk coming into the City.

The carcasses of animals killed at the Corporation Abattoir were the subject of continuous inspection, as an officer of this Department was constantly in attendance. The Veterinary Inspector pays a visit each day; and morning and evening visits Mondays and Thursdays, the days on which the largest slaughtering is carried on.

The following places were visited in search for unsound food, during year 1908 :—

PLACES.	VISITS.
Slaughter Houses	4,588
Shops	10,191
Fish and Fruit Markets	196
Railways	88
Cattle Market	50
Pork Factories	162
Iveagh Markets	29
Hawkers' Stands	1,440
Cold Storage (rooms)	158

RETURN OF UNSOUND FOOD, &c., CONFISCATED AT THE CORPORATION ABATTOIR DURING THE YEAR 1908.

			Lbs.
145¼	Carcasses of Oxen	Beef	95,591
228	,, Sheep	Mutton	18,748
55	,, Lamb	Lamb	2,941
23	,, Calves	Veal	6,104
8	,, Swine	Pork	1,092
	Quantity of Beef	Beef	337
	,, Heads, Plucks Viscera, &c.		3,416
	Total		128,229

The following was voluntarily surrendered or seized in private slaughter-houses, markets and shops during the year 1908:—

	Lbs.
2 Carcasses of Beef (Fresh)	1,356
Cow Heel	3
Pork	15
Corned Beef	17
Mutton	28
Quantity of Fish	48,308
,, Fruit	4,787
,, Vegetables	334
,, Bacon	348½
,, Tripe	448
3 Tins of Preserved Milk	6
Total, ...	55,650½
Grand Total, ...	183,879½

Two carcasses of beef affected with generalized tuberculosis were detected in private slaughter-houses during the year. They were, however, highly nourished carcasses, and had been bought in our Dublin market, and it is certain that they presented no indication of the disease during life.

Return of Cattle, Calves, Sheep, Lambs, Pigs, &c., condemned for Year 1908.

	Wasting or Dropsical	Septic Diseases	Peritonitis	Pleurisy	Tuberculosis	Anthrax	Symtomatic Anthrax	Fevered with Putrefaction	Fevered	Actinomycosis	Swine Fever	Total
Cattle	13	2	2	1	31¼	.	4	76	16	9	.	145¼
Calves	4	.	.	1	3	.	4	9	2	.	.	23
Sheep	64	.	.	1	.	.	.	154	9	.	.	228
Lambs	19	.	.	.	.	.	.	36	.	.	.	55
Pigs	2	.	.	.	.	.	.	3	.	.	3	8

SETS OF VISCERA, ETC.

	Cattle	Calves	Sheep	Lambs	Pigs
	83	17	173	46	7
Livers .	24	.	.	.	.
Heads .	9	.	.	.	.

APPENDIX XV.

Estimated Expenditure of the Public Health Committee's Improvement Fund Sanitary Account for Year to 31st March, 1909, together with the Estimates for Year to 31st March, 1908, and the Expenditure (Estimated) chargeable against same.

	Estimate year to 31st March, 1909	Estimate year to 31st March, 1908	Expenditure (estimated) year to 31st March, 1908
ublic Health Officials:—	£ s. d.	£ s. d.	£ s. d.
Superintendent Medical Officer of Health and Executive Sanitary Officer and Public Analyst ...	1000 0 0	1000 0 0	1000 0 0
Assistant Secretary	350 0 0	350 0 0	350 0 0
District Medical Officers of Health	450 0 0	450 0 0	450 0 0
Three Clerks	350 0 0	240 0 0	243 0 0
Office Attendant	65 0 0	60 0 0	60 0 0
	2215 0 0	2100 0 0	2103 0 0
aboratory and Food and Drugs and General Analysis Department:—			
Chief Chemical Assistant	200 0 0	220 0 0	483 0 0
Water Analyst	100 0 0	100 0 0	
Chemical Assistant	78 0 0	78 0 0	
One Clerk	90 0 0	85 0 0	
Maintenance of Laboratory, Repairs and Proportion of Expenses	170 0 0	170 0 0	170 0 0
	658 0 0	653 0 0	653 0 0
anitary Department:—			
Superintendent	200 0 0	200 0 0	200 0 0
Sanitary Sub-Officers, including Food Inspectors, a Sergeant of the Dublin Metropolitan Police, Sanitary Plumber, Inspector of Slaughter-houses, Lady Sanitary Sub-Officers, House Drains, Wages and Provision for Testing and Examination of Drains, and for Overtime	4080 0 0	3850 0 0	3850 0 0
Uniforms, Boots, &c.	250 0 0	220 0 0	250 0 0
Four Clerks	355 0 0	275 0 0	275 0 0
Two Messengers	128 0 0	195 0 0	195 0 0
Reconstruction of "Single Private Drains" ...	100 0 0	150 0 0	81 1 0
	5113 0 0	4890 0 0	4851 1 0
mmonses, Etc., Account:—			
Summonses and Warrants	120 0 0	100 0 0	100 0 0
Poundage on Fines	40 0 0	35 0 0	35 0 0
	160 0 0	135 0 0	135 0 0
ntagious Diseases (Animals) Act:—			
Veterinary Surgeon	300 0 0	300 0 0	300 0 0
Chief Inspector and Registrar of Dairies	220 0 0	200 0 0	200 0 0
Assistant Dairy Inspector and Supernumerary Inspectors	350 0 0	400 0 0	400 0 0
Uniforms, Boots, Caps	26 0 0	26 0 0	26 0 0
Office Attendant and Messenger	50 0 0	—	12 0 0
	946 0 0	926 0 0	938 0 0
Carried forward £	9092 0 0	8704 0 0	8680 1 0

APPENDIX XV.

Estimated Expenditure of the Public Health Committee's Improvement Fund Sanitary Account for Year to 31st March, 1909, together with the Estimates for Year to 31st March, 1908, and the Expenditure (Estimated) chargeable against same.—*Continued.*

	Estimate year to 31st March, 1909	Estimate year to 31st March, 1908	Expenditu (estimatec y ar to 31 March, 19
	£ s. d.	£ s. d.	£ s.
Brought forward £	9092 0 0	8704 0 0	8680 1
Sanitary Offices and Offices of Veterinary Surgeon, Superintendent of Disinfection, Dairy Inspectors, &c., Nos. 17 and 21 Castle Street:			
Rent of Premises, Rates and Taxes, Alterations, Painting, Gas, etc., Repairs, Dusters, Brushes, Wages, etc.	240 0 0	100 0 0	235 0
Baths and Wash-houses:—			
Superintendent	150 0 0	150 0 0	150 0
Ticket Issuer and Attendants	620 0 0	620 0 0	620 0
Rates and Taxes, Insurance	75 0 0	70 0 0	75 0
Fuel, Lighting, Sweeping Boilers, etc.	600 0 0	450 0 0	612 2
Bathing Dresses, Towels, Sundries, Disinfectants, Soap, &c.	50 0 0	50 0 0	50 0
Plumbing Repairs.—Electric Bells, &c.	120 0 0	—	105 7
Payment for Checking Accounts	13 0 0	13 0 0	13 0
	1628 0 0	1353 0 0	1625 10
Infectious Diseases Account:—			
Bacteriological Examinations	50 0 0	50 0 0	5 0
Notification of Infectious Diseases	200 0 0	220 0 0	180 0
Certificates of Compulsory Interments and Burial of Destitutes	20 0 0	20 0 0	5 0
Hospital Accommodation and Maintenance of Fever Patients	500 0 0	500 0 0	136 0
Maintenance of Smallpox Hospital	150 0 0	150 0 0	148 0
	920 0 0	940 0 0	474 0
Disinfecting Department:—			
Superintendent	160 0 0	150 0 0	153 5
Disinfecting Staff, including Keeper of Disinfecting Chamber, Chief Disinfector, Two Inquiry Officers, Disinfectors, Drivers and Ambulance Men, Limewashers, Cleaners, Charwomen, Yardmen, Laundress, Clerk at Municipal Buildings, Clerk at Depôt and Keeper of Telephone	1700 0 0	1664 0 0	1664 0
Clothing of Staff, Overalls, Boots and Sundries ...	75 0 0	75 0 0	75 0
Proportion of Rent of Depôt, Rates and Taxes ...	45 0 0	45 0 0	45 0
Disinfectants, Apparatus, etc.	120 0 0	120 0 0	175 1
Fuel, Gas, &c.	150 0 0	50 0 0	135 0
Forage, Shoeing and Veterinary Services, Purchase of Vans, Harness, Horses, &c., and New Sheds for Vans	500 0 0	500 0 0	500 0
Compensation for Infected Bedding, Clothing, etc., destroyed, and Clothing for Poor Persons, whose Clothing is being Disinfected.	150 0 0	150 0 0	150 0
	2900 0 0	2754 0 0	2897 8
Carried forward £	14780 0 0	13851 0 0	13911 19

APPENDIX XV.

Estimated Expenditure of the Public Health Committee's Improvement Fund Sanitary Account for Year to 31st March, 1909, together with the Estimates for Year to 31st March, 1908, and the Expenditure (Estimated) chargeable against same.—*Continued.*

	Estimate year to 31st March, 1909	Estimate year to 31st March, 1908	Expenditure (estimated) year to 31st March, 1908
	£ s. d.	£ s. d.	£ s. d.
Brought forward ...	14780 0 0	13851 0 0	13911 19 3
Refuge for Persons from Infected Houses:—			
Maintenance of Inmates, Rates and Taxes ...	100 0 0	100 0 0	100 0 0
Shop Hours Account:—			
Salaries of Two Inspectors	275 0 0	265 0 0	265 0 0
Clothing, etc.	10 0 0	10 0 0	10 0 0
	285 0 0	275 0 0	275 0 0
Building Surveyors and Inspector of Theatres:—			
Proportion of Salaries of Building Surveyors ...	620 0 0	588 0 0	423 0 0
Inspector of Theatres	24 0 0	24 0 0	24 0 0
Petty Expenses, Cycles, Wages of Car-driver and Labourers, and Maintenance of Horse and Car ...	220 0 0	220 0 0	220 0 0
	864 0 0	832 0 0	667 0 0
Proportion of Expenses, Law Agent's Department ...	120 0 0	120 0 0	160 0 0
Proportion of Salaries, City Accountant's Department ...	117 10 0	—	89 3 10
Proportion of Salaries, City Architect's Department ...	281 0 0	300 0 0	300 0 0
	518 10 0	420 0 0	549 3 10
Open Spaces Account:—			
Christchurch Precinct	50 0 0	50 0 0	50 0 0
St. Mary's Graveyard	50 0 0	50 0 0	50 0 0
St. Audœn's Graveyard	50 0 0	50 0 0	50 0 0
	150 0 0	150 0 0	150 0 0
Port Sanitary Authority:—			
Proportion of Expenses	130 0 0	150 0 0	130 0 0
Burial Board Account:			
Registrars and Keepers of Burial Grounds at Kevin Street and Clontarf	40 0 0	40 0 0	40 0 0
Fees to Registrars of Burials	140 0 0	140 0 0	140 0 0
	180 0 0	180 0 0	180 0 0
Advertising, Printing, Stationery, etc.:—			
Printing, Official Books, Office Requisites, Advertising, Postage Stamps, etc.	500 0 0	500 0 0	500 0 0
Carried forward £	17507 10 0	16458 9 0	16463 3 1

APPENDIX XV.

Estimated Expenditure of the Public Health Committee's Improvement Fund Sanitary Account for Year to 31st March, 1909, together with the Estimates for Year to 31st March, 1908, and the Expenditure (Estimated) chargeable against same.—*Continued.*

	Estimate year to 31st March, 1909	Estimate year to 31st March, 1908	Expenditure (estimated) year to 31st March, 1908
	£ s. d.	£ s. d.	£ s. d.
Brought forward £	17507 10 0	16458 0 0	16463 3 1
Street Trading of Children:—			
Expenses of enforcing Regulations	50 0 0	60 0 0	50 0 0
Telephones:—			
Rent of Instruments in various Departments ...	125 0 0	125 0 0	125 0 0
Miscellaneous:—			
Medical Examinations *re* Accidents	5 0 0	5 0 0	5 0 0
Various Petty Expenses—Purchase of Samples for Analysis, Confiscation of Unsound Food, etc. ...	65 0 0	65 0 0	65 0 0
Wages of Coachman, Rent of Stable, Gas, Storage, Shoeing, Clothing, etc.	130 0 0	130 0 0	130 0 0
Purchase of Brougham for Superintendent Medical Officer	—	79 0 0	—
Expenses of Delegates to Congresses, and other Sundry Expenses	80 0 0	80 0 0	80 0 0
	280 0 0	350 0 0	280 0 0
Cook Street and St. Michael's Lane Area Clearance Scheme, Preliminary Expenses	25 0 0	—	—
Fitting up a Lavatory for Ladies in house to be taken ...	200 0 0	—	—
Merchants' Quay and Eden Quay Urinals	—	107 0 0	201 0 0
Jervis Lane Urinal	—	47 0 0	
	—	154 0 0	201 0 0
Dollymount Improvement Scheme and Urinal	—	547 0 0	413 11 10
Dollymount Urinal (on Bull Promenade)	100 0 0	—	—
	100 0 0	547 0 0	413 11 10
O'Connell Street Ladies' Lavatory	—	—	263 0 0
Underground Convenience at Wexford Street and Aungier Street	600 0 0	—	—
Latrine at Ringsend, near Canal Bridge	150 0 0	—	—
Expenses in connection with various Improvement Schemes under the 28th Section of Public Health Act, 1878 ...	250 0 0	—	—
Lane off Baggot Street	70 10 0	—	—
Carried forward £	19358 0 0	17694 0 0	17795 14 11

APPENDIX XV.

Estimated Expenditure of the Public Health Committee's Improvement Fund Sanitary Account for Year to 31st March, 1909, together with the Estimates for Year to 31st March, 1908, and the Expenditure (Estimated) chargeable against same.—*Continued.*

	Estimates for Year to 31st March, 1909.	Estimates for year to 31st March, 1908.	Expenditure (Estimated) for year to 31st March, 1908.
	£ s. d.	£ s. d.	£ s. d.
Brought forward £	19358 0 0	17694 0 0	17795 14 11
Dublin Corporation Consolidated Loans Fund:—			
Contribution for Sinking Fund	706 0 0	705 0 0	706 0 0
Contribution for Dividends	2641 9 0	2641 9 0	2540 19 0
Composition for Stamp Duty on Stock	35 0 0	40 0 0	34 15 6
	3382 9 0	3386 9 0	3281 14 6
Principal and Interest on Loans:—			
Principal	1048 15 6	1048 15 6	1048 15 6
Interest	551 5 4	586 2 0	586 0 11
	1600 0 10	1634 17 6	1634 16 5
Annuity Loans Account:—			
Isolation Hospital Loan	213 9 7	213 9 7	208 12 8
Dublin Joint Hospital Board, Estimated Product of 1d. in £ Improvement Rate	3760 0 0	—	—
	28313 19 5	22928 16 1	22920 18 6
Estimated Income, Year 1908-9:—			
Sanitary Salaries, Recoupment by Local Government Board	1940 0 0	1940 0 0	1940 0 0
Receipts from Baths and Wash-houses	1500 0 0	1500 0 0	1500 0 0
Receipts from Private Extra Municipal and other Disinfections	75 0 0	75 0 0	75 0 0
Receipts from Police Court Fines and Costs ...	350 0 0	350 0 0	350 0 0
Isolation Hospital—Retaining Fees payable by Dublin Port Sanitary Authority and North and South Dublin Rural District Councils	60 0 0	60 0 0	60 0 0
	3925 0 0	3925 0 0	3925 0 0
	24388 19 5	19003 16 1	18995 18 6
Estimated Excess of Credits over Debits brought into Estimates, Year to 31st March, 1908	—	1315 9 9	805 7 7
		17688 6 4	18190 10 11
Deduction per Order of the Estates and Finance Committee, as per Appendix XXV.	1130 0 0		
	23258 19 5		
Estimated Excess of Debits over Credits, account year to to 31st March, 1908	502 4 7		
£	23761 4 0		

JOSEPH P. KERRIGAN, *City Accountant.*

APPENDIX XVI.—PUBLIC HEALTH COMMITTEE.

Estimates Year to 31st March, 1909.

Savings and Excess Expenditure on Account Estimates, Year to 31st March, 1908.		Debits	Credit
		£ s. d.	£ s. d
Public Health Officials		3 0 0	—
Laboratory and Food and Drugs and General Analysis Department		—	—
Sanitary Department		—	38 19 0
Summonses, &c., Account		—	—
Contagious Diseases (Animals) Act		12 0 0	—
Sanitary and Veterinary Offices, &c.		135 0 0	—
Baths and Wash-houses		272 10 2	—
Infectious Diseases Account		—	466 0 0
Disinfecting Department		143 8 1	—
Building Surveyors and Inspector of Theatres		—	165 0 0
Proportion of Expenses, Law Agent's Department ...		40 0 0	—
Proportion of Salaries, City Accountant's Department ...		89 3 10	--
Port Sanitary Authority		—	20 0 0
Street Trading of Children		—	10 0 0
Miscellaneous and Contingencies		—	70 0 0
Improvement Committee, Merchants' Quay, Eden Quay and Jervis Lane Urinals		47 0 0	—
Dollymount Improvement Scheme		—	133 8 2
O'Connell Street Ladies' Lavatory		263 0 0	—
Dublin Corporation Consolidated Loans Fund		—	104 14 6
Principal and Interest on Loans		—	0 1 1
Annuity Loans Account		—	4 16 11
Estimated Excess of Credits over Debits brought into Estimates to 31st March, 1908	4638 18 9	1095 2 1	1012 19 8
Less Expenditure over Income Year to 31st March, 1907 ...	2611 14 6		
	2027 4 3		
Excess of Assets over Liabilities as per Balance Sheet, 31st March, 1907	1517 2 1	510 2 2	—
Deduct Credits	—	1515 4 3 1012 19 8	1012 19 8
Amount brought to Debit of Estimates for Year to 31st March, 1907	£	502 4 7	

JOSEPH P. KERRIGAN, *City Accountant.*

FORTY-SEVENTH ANNUAL REPORT

OF

SIR CHARLES R. CAMERON.

PUBLIC ANALYST,

FOR THE YEAR 1908.

The work in the laboratory increased as compared with former years, the number of analyses—6,089— being the greatest on record. The increase was largely due to examination of sewage, sewage effluents, sludge, and lime for the Improvements Committee, who are in charge of the Main Drainage Works.

A large number of articles supplied, or offered for supply, to the Corporation were examined, and several of them were found to be grossly adulterated. The provisions of the Acts relating to adulteration apply only to food, drink, drugs, fertilizers, and feeding stuffs, but they should be extended so as to include every article liable to be adulterated. Probably the provisions of the Merchandise Marks Act could be made to apply to such articles as white lead, red lead, etc.

The following analyses were made for the Food Inspectors :—

ARTICLE.	NUMBER.
Milk	1,275
Butter	192
Whiskey, ...	85
Buttermilk	63
Tea	45
Coffee	34
Margarine	12
Mustard	11
Cocoa	6
Butter Substitute, ...	2
Condensed Milk, ...	2
Rum	1
Drugs	13
Total	1,741

Of the specimens of milk fifty-three were adulterated with at least 6.25, 6.25, 6.25, 7.5, 7.5, 7.5, 7.5, 7.5, 8.9, 8.9, 8.9, 8.9, 8.9, 10, 10, 10, 10, 10, 11, 13, 13, 13, 13, 13, 13, 13, 14, 14, 14, 14, 14, 16, 16, 16, 16, 18, 19, 19, 19, 21, 21, 21, 23, 23, 23, 26, 26, 26, 28, 32, 32, 34, and 41 per cent. of added water respectively. Twelve were deprived of at least 20, 20, 23, 30, 30, 30, 33, 40, 43, 43, 46, and 83 per cent. of their fats respectively, and the following eight specimens were both adulterated with added water and also deficient in their fats :—

Per cent. of Added Water.	Per cent. Deficiency of Fats.
2.4	10.0
2.4	16.0
6.25	10.0
10.0	16.0
10.0	23.0
11.0	13.0
18.0	26.0
23.0	23.0

Of the specimens of butter fourteen were composed almost entirely of fats foreign to butter, and one was adulterated with at least 51 per cent. of fats foreign to butter.

One of the specimens of margarine contained at least 60 per cent. of pure butter.

The last Act relating to margarine limits the amount of butter in margarine to 10 per cent. This is presumably to prevent margarine containing large proportions of butter being sold as butter.

Of the specimens of buttermilk ten were adulterated with at least 17, 19, 25, 25, 30, 35, 48, 55. 62, and 75 per cent. of added water respectively, exclusive of 25 per cent. allowed for churning purposes.

Of the specimens of whiskey five were 29, 33, 35, 36 and 50 degrees under proof, and were, therefore, adulterated with 5.33, 10.67, 13.47, 14.67, and 33.33 per cent, of added water respectively. No other adulteration was present.

Of the drugs, two were defective, namely, Mercury Ointment, contained only 4.9 and 10.1 per cent. of mercury, instead of, at least, 48.48 per cent.

For Improvement Committee and the Engineer's Department, City Hall, the following analyses were made :—

ARTICLE.	NUMBER.
Sewage Effluent	677
Sewage	390
Sludge	158
Lime	105
Liffey Water	9
Sea Water	4
Potable Water	329

ARTICLE.	NUMBER.
Coal	5
Colza Oil	5
Drying Oil	1
Machine Oil	1
Sperm Oil	1
Terebene	3
Turpentine	1
Whiting	1
White Lead	2
Brunswick Green in Oil ...	1
Hard Oak Varnish ...	1
Soap	3
Soft Soap	2
Yellow Ochre	1
Cement	1
Asphalte	1
Bitumen	1
Indian Red	1
Red Lead	3
Black Varnish ...	1
Candles	2
Chrome Yellow	1
Sewer Pipe	1
Brick	1
Total ...	1,713

The specimen of black varnish was not of good quality; the specimen of soap contained an excess of water; the two specimens of colza and sperm oils were adulterated; the three specimens of red lead were adulterated with at least 11.5, 38.5, and 72.4 per cent. of barium sulphate respectively. The

specimen of chrome yellow in turps contained 33.8 per cent. of China clay; the specimen of yellow ochre in oil contained 27.5 per cent. of calcium carbonate (chalk). Of the five specimens of coal examined, three were of very bad quality. One contained 39.63 per cent. of ash and 11.37 per cent. of sulphur; another contained 15.83 per cent. of ash and 7.16 per cent. of sulphur, and the third 15.85 per cent. of ash.

For the Sanitary Department six specimens of water were analysed. One proved to be sewage, and one contained large numbers of minute crustaceans, and others minute and microscopic animals.

For Mr. Collins, Inspector of Dairies, seven specimens of milk, three of urine and one of water were analysed. The specimen of water was of inferior quality. The specimens of milk and urine were free from typhoid and tubercular bacilli.

One specimen of milk, analysed for A. Watson, Esq., V.S., Dublin Corporation, was free from tubercular bacilli.

In a recent Act of Parliament excessive quantities of lead in pewter vessels is prohibited. Three vessels of measurement were examined for the Markets Committee, but no excess of lead was found in any of them.

For E. W. Eyre, Esq., City Treasurer, Municipal Buildings, one specimen of beeswax and one of coal were analysed. The beeswax was heavily adulterated with resin. The specimen of coal was good.

For the Guardians of the North Dublin Union the following analyses were made:—

ARTICLE.			NUMBER.
Milk	...	...	1,372
Drugs	...	...	188
Butter	...	...	110
Bread	...	...	3
Flour	...	...	2
Yeast	...	...	1
Boiled Rice	...	...	1
Soap	...	...	2
Tobacco	...	...	2
Total		...	1,681

Of the specimens of milk two were adulterated with at least 7.5 and 8.9 per cent. of added water respectively.

Two of the specimens of butter contained excess of water, namely, 17.7 and 17.9 per cent. respectively.

The specimens of bread and yeast were not of good quality.

Twelve of the drugs were defective.

The Guardians of the North Dublin Union have fixed a standard for their milk. For some years it was that of average quality of milk, namely :—

Total Solids ...	...	12.5 per cent.
Including Fats	...	3.5 „

The standard has lately been reduced, as regards fats, to 3.2 per cent. When the milk falls below the standard, though it may still be above the legal one, fines are imposed upon the contractors.

I have never made any charge for analysis of articles of food or drink submitted to me by the

Boards of Guardians of the Unions, because I felt that I was doing good work for the poor inmates, but the North Dublin Union Guardians have sent unreasonably large numbers of milk and butter samples in 1907 and 1908, by which I have incurred considerable expense, and for which some remuneration should be given.

For the Guardians of the South Dublin Union the following analyses were made :—

ARTICLE.	NUMBER.
Milk	292
Drugs	172
Butter	54
Soap	5
Total	523

Of the specimens of milk one was deprived of at least 20 per cent. of its fats.

Three of the butters contained excess of water, namely, 18.6, 19.3, and 19.9 per cent, respectively.

Seventeen of the drugs were defective.

For the Richmond District Lunatic Asylum ten specimens of butter, nine of soap, seven of milk, six of cocoa, two of whitelead, and two of paint were analysed. The specimens of paint did not contain whitelead, the basis of all good paint. All the other articles were pure.

For the Department of Agriculture and Technical Instruction for Ireland, Upper Merrion Street, Dublin, one hundred and seventy-eight specimens of butter, one of fertilizer and one of feeding stuff were analysed. Of the specimens of butter ninety-nine were composed almost entirely of fats foreign to

butter. The specimen of feeding stuff was not up to guarantee.

Of the specimens of "butter" analysed for the Department of Agriculture and Technical Education, 115 were purchased by their agents in England, and were sold as Irish butter. No fewer than 93 were margarine. I understand that the Department has aroused the English authorities with regard to this shameful state of things, so injurious to one of Ireland's most important industries—butter making.

For the Mining Co. of Ireland, Loftus Lane, seven specimens of lead pipe were examined to ascertain the percentage of tin in them. This Company manufactures the pipe which alone can be legally used in connection with the Vartry water. It contains 96.5 per cent. of lead and 3.5 per cent. of tin.

For the Midland Great Western Railway, Broadstone, three specimens of whitelead and one of waggon grease were analysed. They were pure.

For the Great Northern Railway, Amiens Street, one specimen of water and one of whitelead were analysed. The specimen of water was largely polluted, and the white lead was pure.

Five specimens of milk were analysed for Mr. J. Gartland, 117 Great Britain Street, and were pure.

Three specimens of milk analysed for Mr. Hatch, 6 Lower Lesson Street, and were pure.

One specimen of milk and one of buttermilk were analysed for Alderman Sir Joseph Downes, North Earl Street. The specimen of milk was heavily adulterated.

For the D.B.C., Dame Street, seven specimens of milk were analysed. One was adulterated with at least 14 per cent. of added water.

For H. L. Goodbody, Esq., Whithall, Drumcondra, three specimens of milk were analysed. One was deprived of at least 20 per cent. of its fats.

One specimen of milk analysed for the Right Hon. the Lord Mayor, Mansion House, was of rich quality.

One specimen of milk analysed for Sir C. Nixon, Bart., M.D., 2 Merrion Square, was adulterated with at least 7.5 per cent. of added water and was also deficient of at least 33 per cent. of its fats.

A specimen of milk analysed for Mr. Varian, Talbot Street, was of very rich quality.

A specimen of milk analysed for the Bluecoat School, Blackhall Place, was of rich quality.

A specimen of milk analysed for M. T. Cronin, Francis Street, was of very poor quality.

Two specimens of shell cocoa analysed for A. Begg, Esq., Bachelor's Walk, were of good quality.

Three specimens of butter analysed for Messrs. A. Findlater & Co., Upper Sackville Street, were pure.

Two specimens of milk were analysed for Mrs. Blunden, 9 Home Farm Road. One was adulterated with at least 11 per cent. of added water and was also deficient of at least 36 per cent. of its fats. The other specimen was adulterated with at least 10 per cent. of added water, and was also deficient of at least 16 per cent. of its fats.

One specimen of flour analysed for Miss Synott, 41 Arran Quay, was pure.

One specimen of flour was analysed for the Secretary, General Prisons Board, was pure.

One specimen of milk analysed for Mr. J. Ross, Temperance Hotel, Parkgate Street, was of very poor quality.

One specimen of butter analysed for Messrs. Dickson, Exchange Street, was pure.

Two specimens of milk analysed for Mrs. Cullen, North King Street, were of very poor quality.

One specimen of milk analysed for Dr. Taylor, Protestant Orphanage, N. C. Road, was deprived of at least 70 per cent. of its fats.

Two specimens of milk analysed for the House of Industry Hospitals, Great Brunswick Street, were of the average quality of pure milk.

Three specimens of milk were analysed for J. Scully, Esq., J.P., 23 Dolphin's Barn Street. One was adulterated with at least 10 per cent. of added water.

One specimen of milk analysed for Miss Keely, 76 Benburb Street, was of poor quality.

One specimen of milk analysed for Dr. Lumsden, St. James's Gate Brewery, was of very rich quality.

One specimen of milk analysed for Mr. T. Rothwell, 43 Leinster Street, was pure.

One specimen of milk analysed for J. Picton Bradshaw, Esq., Clontarf, was of very rich quality.

One specimen of milk analysed for Mrs. McAdam, 60 Church Street, was above the average quality of pure milk.

One specimen of milk analysed for the Governor, Mountjoy Prison, was of rich quality.

One specimen of butter analysed for Councillor Rooney, Infirmary Road, was pure.

One specimen of milk analysed for Councillor Doyle, was adulterated with at least 66 per cent. of added water.

One specimen of milk analysed for Mr. Hayden, 129 Upper Dorset Street, was pure.

One specimen of milk analysed for Mr. Murphy, 45 Bolton Street, was of very poor quality.

One specimen of milk analysed for Mr. T. McBennett, 8 Pimlico, was adulterated with at least 8.9 per cent. of added water.

One specimen of butter analysed for Mr. R. McMahon, 11 Harcourt Street, was composed almost entirely of fats foreign to butter.

Two specimens of milk were analysed for Robert & Co., Grafton Street. One was deprived of at least 40 per cent. of its fats.

One specimen of milk analysed for Mr. J. C. Carroll, 30 Lower Abbey Street, was of rich quality.

One specimen of milk and one of water, analysed for G. A. Leech, Esq., Danesfield, Dollymount, were of good quality.

One specimen of milk analysed for Lady Stoker, 8 Ely Place, was of very poor quality.

One specimen of condensed milk received from Mr. J. Nolan, 11 Tramway Cottages, Clontarf, was pure.

One specimen of milk and one of water analysed for Captain Holden, 77 Dame Street, were of good quality.

Three specimens of butter analysed for R. Jones, Esq., Little Green Street, were pure.

One specimen of milk analysed for Mrs. Mahon, 9 Wentworth Place, was under the average quality of pure milk.

One specimen of condensed milk received from Mr. T. Rose, 22 York Street, was unfit for use.

One specimen of tinned salmon received from Mr. J. Smith, 3 Belvedere Road, was unfit for use.

One specimen of butter analysed for E. T. Kent, Esq., City Treasurer's Office, was pure.

One specimen of butter analysed for the Superior, St. Vincent's Orphanage, Glasnevin, was pure.

One specimen of whiskey was analysed for Messrs. Gilbey & Co., Lower O'Connell Street.

One specimen of milk analysed for T. W. Kerrigan, Esq., 48 Botanic Avenue, was of poor quality.

One specimen of water and one of soil were analysed for Councillor Higginbotham, 9 Sackville St. The water was tolerably good.

One specimen of water was analysed for the Royal Hibernian Military School, and was tolerably good.

One specimen of water analysed for G. T. Moore, Esq., C.E., Foster Place, was tolerably good.

One specimen of water analysed for F. North, Esq., Grafton Street, was good.

One specimen of water analysed for J. Harold Pim, Esq., College Green, was of tolerably good quality.

One specimen of water analysed for Messrs. Clifton and Cooper, Gardiner Street, was polluted.

Two specimens of water were analysed for Messrs. Koenigs, Kingsbridge. One was of inferior quality.

Two drugs were analysed for Messrs. Hunt & Co., Bride Street.

Two specimens of milk analysed for Mr. Henry, Conquer Hill, Clontarf, were pure and free from typhoid bacilli.

One specimen of milk analysed for Mr. J. Foxall, 28 Haddon Road, was free from typhoid bacilli.

One specimen of milk and one of water, taken by me at Clontarf, were free from typhoid bacilli.

One specimen of water analysed for Mr. C. J. O'Hehir, 21 Lower Ormond Quay, was of inferior quality.

One specimen of water analysed for M. Gavan, Esq., 66 Summerhill, was largely polluted.

One specimen of water analysed for Messrs. Baird and Todd, Talbot Place, was largely polluted.

One specimen of soap analysed for Phœnix Laundry, Russell St., was of good quality.

Two specimens of liquid were received from Dr. Oulton, Fitzwilliam Street, for pathological examination.

For Messrs. Edward Fisher & Co., Burgh Quay, two fertilizers were analysed, and both were deficient in solubility.

One specimen of feeding stuff was analysed for R. E. Alexander, Esq., Albert Model Farm, Glasnevin. It was not up to guarantee.

For Messrs. O'Keefe, Ltd., Mill Street, sixty-six fertilizers were analysed.

There were four specimens of feeding stuff analysed for Messrs. Barmack & Co., Fumbally Lane.

For the Dublin and Wicklow Manure Company, Fairveiw, fourteen fertilizers were analysed.

Some ham, beef, and mutton, received from Rev. P. A. Gogarty, Superior, Christian Brothers, Marino, were supposed to contain some poisonous matter, as many persons had become ill after partaking of them. The mutton was found to contain large

quantities of ptomaines—noxious alkaloids—than are sometimes developed in meat.

Total number of articles analysed during the year ended 31st December, 1908 :—

ARTICLE.	NUMBER.
Milk	3,012
Butter	555
Buttermilk	64
Condensed Milk	3
Margarine	12
Tea	45
Coffee	34
Cocoa	14
Bread	3
Flour	4
Yeast	1
Boiled Rice	1
Butter Substitute ...	2
Tinned Salmon	1
Mustard	11
Whiskey	86
Rum	1
Drugs	375
Water	348
Liffey Water	9
Sea Water	4
Effluent	677
Sewage	390
Sludge	158
Lime	105
Coal	6
Colza Oil	5
Drying Oil	1

ARTICLE.	NUMBER.
Machine Oil	1
Sperm Oil	1
Terebene	3
Turpentine	1
Whiting	1
White Lead	8
Brunswick Green in Oil ...	1
Hard Oak Varnish ...	1
Soap	20
Soft Soap	2
Yellow Ochre	1
Cement	1
Asphalte	1
Bitumen	1
Indian Red	1
Red Lead	3
Black Varnish	1
Candles	2
Paint	2
Chrome Yellow	1
Sewer Pipe	1
Brick	1
Lead Pipe	7
Pewter Measures ...	3
Beeswax	1
Waggon Grease	1
Fertilizers	83
Feeding Stuff	6
Urine	5
Ham, Beef, and Mutton ...	3
Total, ...	6,901

Total number of articles adulterated or defective during the year ended 31st December, 1908 :—

ARTICLE.	NUMBER.
Milk	88
*Butter	120
Buttermilk	10
Margarine	1
Whiskey	5
Drugs	31
Condensed Milk ...	1
Tinned Salmon	1
Soap	1
Colza Oil	2
Sperm Oil	1
Red Lead	3
Coal	3
Chrome Yellow	1
Yellow Ochre	1
Beeswax	1
Paint	2
Feeding Stuffs	2
Fertilizers	2
Mutton (Ptomaines) ...	2
Total, ...	278

* 93 of the samples sold as Irish butter, in England, and analysed for the Irish Department of Agriculture and Technical Education, were margarine.

FINES INFLICTED BY THE GUARDIANS OF THE NORTH DUBLIN UNION ON MILK CONTRACTORS.

Many years ago I informed the Guardians of the North Dublin Union that average quality milk contained 12.5 per cent. of total solid matters, including 3.5 per cent. of fats. This information was given to enable the guardians to define the terms for contracts for the supply of milk to their Workhouse. The contracts stipulated that the contractors whose supply of milk fell below the standard would be fined, the fines being graduated in proportion to the descent below the standard. For many years this state of things continued, and with some exceptions the standard was up to the standard, and often above it. In 1907 there were 72 fines inflicted, varying from 8s. to £3 15s. $0\frac{3}{4}$d., and totalling £111 13s. $6\frac{3}{4}$d.

In 1908 the Guardians reduced the standard as regards fats from 3.5 to 3.2 per cent. The legal standard is 3 per cent., which is assumed to be the proportion that might only be found in the *poorest* pure milk. As, however, milk of average quality contains 3.5 per cent. why reduce 3.5 to 3.2 per cent.? If milk were obtained from one or two cows it might happen to be very poor as regards fats, but the mixed milk of a herd of cows would contain some milk above the average quality and some below it; but the mean would contain, if the herd were a fairly large one, 3.5 per cent. Numerous examinations of the milk of Dublin dairy cows,

which I have examined shew that its quality is actually above the average.

I have compared the average composition of 100 samples of milk from this Union, examined at the close of 1907, with a similar period in 1908.

Average composition of 100 samples of milk received in 1909 and 100 samples received in 1908. 100 parts contain :—

	1907.	1908.
Water	85.82	86.65
Non-Fatty Solids ...	9.85	8.90
Fats	4.18	4.45
	100.00	100.00

In the 100 samples in 1907 11 fell, as regards fats, below the standard of 3.5 per cent., and in 1908, 4 specimens only had less than 3.5 per cent. of fats.

NORTH DUBLIN UNION.

MASTER'S OFFICE, 30th MARCH, 1909.

FINES INFLICTED ON MILK CONTRACTORS FROM 1st JANUARY TO 31st DECEMBER, 1908.

1908.		£	s.	d.
January 5th	... ...	3	14	$0\frac{3}{4}$
January 1st	... ...	3	14	$0\frac{3}{4}$
January 5th	... ...	3	14	$0\frac{3}{4}$
February 5th	... ...	1	0	0
February 12th	... ...	2	5	0
February 20th	... ...	2	9	$4\frac{1}{2}$
March 16th	... ...	0	16	0
March 21st	... ...	1	5	0
March 26th	... ...	1	3	4
March 30th	... ...	4	1	3
April 1st	... ...	1	2	9
May 7th	... ...	0	12	8
June 3rd	... ...	1	16	0
July 8th	... ...	2	1	2
July 29th	... ...	1	0	0
August 15th	... ...	0	16	0
August 15th	... ...	1	16	0
August 20th	... ...	1	19	5
August 27th	... ...	1	10	0
October 25th	... ...	1	0	0
November 14th	... ...	1	0	7
December 25th	... ...	1	0	7
	Total	£36	3	3

Prosecutions under the Food and Drugs Act.

Name	Address	Article Adulterated	Extent of Adulteration	Fines	Costs
				£ s. d.	£ s. d.
Allwell, Patrick ...	144 Townsend Street	Buttermilk	55% added water	2 0 0	—
Brady, Joseph ...	42 Francis Street	Whiskey	33% under proof	2 0 0	—
Brennan, Mary ...	40 New Street	New Milk	20% fats abstracted	1 0 0	—
Burchell, Edward ...	Baggot Ho., S.C.R.	do.	8·9% added water	1 0 0	—
Burke, Thomas ...	74 Church Street	do.	2·4% added water, 16% fats abstracted	3 0 0	—
Byrne, Charles ...	Wilkinst'n, Crumlin	do.	8·9% added water	0 10 0	—
Bourke, Edward ...	3 Talbot Street	Butter	Fats foreign to Butter	0 5 0	—
Byrne, Kate ...	11 Upper Abbey St.	New Milk	30% fats abstracted	0 10 0	—
Bulmer, Bernard ...	46 Phoenix Street	do.	26% added water	2 0 0	—
Byrne, Ellen ...	14 Wexford Street	do.	Refusal to sell	1 0 0	—
Bailey, Michael ...	61 Bridgefoot Street	Butter	Fats foreign to Butter	1 10 0	—
Bradley, Bridget ...	2 Hill Street	New Milk	23% added water	3 3 0	—
Burke, Thomas ...	74 Church Street	Buttermilk	17% do	2 0 0	—
Burchell, Edward ...	Baggot House, South Circular Road	New Milk	21% do	1 0 0	—
Byrne, John ...	34 Richmond Place	do.	21% do	5 0 0	—
Barry, James ...	Balbutcher, Glasnevin	do.	13% do.	10 0 0	—
Caffrey, Matthew ...	139 Phibsboro' Rd.	do.	10% do.	2 0 0	—
Coffey, William ...	110 Philipsburgh Av.	do.	28% do.	2 0 0	—
Cronin, Hannah M. ...	97 Up. Dorset St.	do.	13% do.	5 0 0	—
Cronin, Jeremiah ...	2 Francis Street	do.	2·4% added water, 16% fats abstracted	Cautioned	

Name	Address	Article Adulterated	Extent of Adulteration	Fines	Costs
				£ s. d.	£ s. d.
Cosgrave, Ellen ...	123 Thomas Street	New Milk	6.25% added water, 10% fats abstracted	0 10 0	—
Cosgrave, Ellen ...	123 Thomas Street	do.	14% added water	5 0 0	—
Carrigy, Thomas ...	40 Mountjoy Street	do.	21% do.	1 0 0	—
Connell, Peter ...	99 Lr. Gloucester Street	Butter	Fats foreign to Butter	5 0 0	—
Cullen, Thomas ...	8 Common Street	New Milk	8.9% added water	5 0 0	—
Do. ...	152 North King Street	do.	10% do.	5 0 0	—
Collins, John ...	14 Gt. Longford Street	do.	7·5% do.	0 10 0	—
Condon, Anne ...	101 Up. Dorset Street	Buttermilk	25% do.	1 0 0	—
Coyle, Patrick ...	8 Graham's Court	New Milk	16% do.	5 0 0	—
Crowley, Mary ...	16 Dominick Street, Up.	do.	23% do.	5 0 0	—
Donnellan, Thomas ...	84 Prussia Street	do.	19% added water	5 0 0	—
Dunne, Thomas ...	6 Lr. Jane Place	do.	Refusal to sell	6 0 0	—
Dwyer, John ...	11 North King Street	do.	7.5% added water	3 0 0	—
Danish and Irish Creamery Co. (Thos. O'Connor)	52 Gt. Britain Street	Butter	Fats foreign to Butter	5 0 0	—
Dunne, James ...	107 Gt. Britain Street	Buttermilk	48% added water	2 0 0	—
Egan, James ...	2 Annesley Place	Butter	Fats foreign to Butter	5 0 0	—
Fleming, Joseph ...	90 Lr. Clanbrassil St.	do.	46% fats abstracted	3 0 0	—
Fagan, Mary A. ...	80 Lr. Clanbrassil St.	New Milk	37% added water	10 0 0	—
Farrelly, John ...	13 Boyne Street	do.	19% added water	2 0 0	—
Fagan, Mary A. ...	80 Clanbrassil Street, Lower	do.	13% do.	Cautioned	—

Name	Address	Article Adulterated	Extent of Adulteration	Fines	Costs
				£ s. d.	£ s. d.
Gartland, James ...	72 Queen Street	New Milk	6.25% added water, 16% fats abstracted	2 0 0	—
Geraghty, Bridget ...	20 Townsend Street	do.	13% added water	1 0 0	—
Grant, Mary J. ...	15 North Strand	do.	11% added water, 33% fats abstracted	1 0 0	—
Gartland, James ...	213 Gt. Britain Street	do.	16% added water	Dismissed guarantee produced	
Gouvernin, Mary A. ...	37 Gt. Britain Street	do.	13% do.	3 0 0	—
Geraghty, Patrick ...	6½ Bow Bridge	do.	23% fats abstracted	2 0 0	—
Hanlon, Stephen ...	26 Lr. Dorset Street	do.	18% added water, 26% fats abstracted	5 0 0	—
Hutton, John ...	23 Richmond Ctgs.	do.	11% added water	3 0 0	—
Hayden, Michael ...	129 Up. Dorset Street	do.	7.5% do.	3 0 0	—
Haydock & Co., Ltd. ...	124 Cork Street	Mercury Ointment	Debased Article	1 0 0	—
Hall, Robert ...	113 Thomas Street	do.	do.	Cautioned	—
Higgins, Elizabeth ...	48 Power's Court	New Milk	19% added water	0 10 0	—
Hamilton, J. D. ...	Mt. John, Newcastle	do.	26% do.	0 1 0	1 0 0
Hogan, Michael ...	73 Talbot Street	do.	33% fats abstracted	0 10 0	—
Jordan, Andrew ...	100 Lr. Tyrone Street	do.	8.9% do.	3 0 0	—
Kavanagh, William ...	51 Lr. Sheriff Street	Butter	Refusing to sell	1 0 0	—
Kavanagh, Margaret ...	34 Old Kilmainham	New Milk	20% fats abstracted	0 10 0	—
Kerrigan, Mary ...	10 Redcow Lane	Buttermilk	35% added water, exclusive of 25% allowed	Dismissed—it being labelled "Warranted not pure buttermilk."	

Name	Address	Article Adulterated	Extent of Adulteration	Fines	Costs
				£ s. d.	£ s d.
Kinsella, Miss ...	37 Up. Abbey Street	New Milk	23% added water, 23% fats abstracted	5 0 0	--
Kavanagh, William ...	73 Coombe	do.	30% fats abstracted	1 0 0	--
Kavanagh, Thomas ...	160 North King Street	Butter	Fats foreign to Butter	2 1 0	--
Kelly, Margaret ...	10 Vernon Avenue, Clontarf	New Milk	43% fats abstracted	Cautioned	--
Kelly, Mary ...	8 Marlboro' Street	do.	Refusal to sell	5 0 0	--
Kavanagh, Edward ...	Kimmage	do.	do.	3 0 0	—
Kavanagh, William ...	51 Lr. Sheriff Street	do.	do.	4 0 0	—
King, William ...	Killucan	do.	do.	3 0 0	—
Kavanagh, William ...	73 Coombe	do.	30% fats abstracted	1 0 0	—
Kavanagh, John ...	86 Prussia Street	do.	Refusal to sell	4 0 0	—
Kavanagh, Nicholas ...	29 Marrowbone Lane	do.	10% added water	3 0 0	—
Lawlor, John ...	27 Charlotte Street	do.	14% do.	2 0 0	—
Lister, William ...	41 Upper Rathmines	do.	10% do.	2 0 0	—
Lennon, James ...	64 Lower Clanbrassil St.	do.	8·9% do.	1 0 0	—
Marmion, Alicia ...	42 Up. Mercer Street	do.	Refusing to sell	1 0 0	—
Mulihill, Margaret ...	15 Sth. Richmond St.	do.	10% added water	0 10 0	—
M'Geehan, John ...	34 Philipsburgh Av.	do.	14% do.	1 0 0	—
Murphy, Mary ...	100 Foley Street	do.	Refusal to sell	5 0 0	—
Mahony, Patrick ...	Laffine Ho., Goold's Cross	do.	11% added water	—	1 15 0
Murphy, Cornelius ...	10 Cuffe Street	do.	Refusal to sell	Dismissed	—
Webb, Mary A (Servant)	do.	do.	do.	Cautioned	—

Prosecutions under the Food and Drugs Act.

Name	Address	Article Adulterated	Extent of Adulteration	Fines	Costs
				£ s. d.	£ s. d.
McDonald, James ...	62 Upper Dorset Street	Butter	Fats foreign to Butter	10 0 0	—
Morgan, John ...	66 Charlemont Street	New Milk	Obstruction at Harcourt Street Railway Station	2 0 0	—
Manly, Robert ...	28 Chamber Street	Butter	Fats foreign to Butter	3 0 0	—
Morgan, Patrick ...	128 Townsend Street	Buttermilk	35% added water	Cautioned	—
Muldoon, Kate ...	7 Benburb Street	Whiskey	5.33% do.	1 0 0	—
Maher, Mary ...	1 Mid. Gardiner Street	New Milk	32% do.	3 0 0	—
Murphy, Patrick ...	30 Chamber Street	do.	13% do.	5 0 0	—
Martin, Percy ...	18 Berkeley Street	Buttermilk	30% do.	5 0 0	—
Nash, R. G. ...	Millmount House, Drumcondra	do.	19% added water, exclusive of 25% allowed	Cautioned	—
O'Dwyer, Michael ...	2 Gloucester Pl., Lr.	New Milk	30% fats abstracted	0 10 0	—
O'Neill, Garrett ...	16 Spitalfields	do.	8.9% added water	0 10 0	—
O'Donohoe, Joseph ...	76 Church Street	Butter	Fats foreign to Butter	Cautioned	
Do.	do.	do.	Unlabelled wrapper	Dismissed	
O'Toole, Christopher ...	28 Stoneybatter	New Milk	43% fats abstracted	2 0 0	—
O'Keeffe, James ...	74 Blessington Street	Buttermilk	Refusal to sell	5 0 0	—
Purcell, Kate ...	106 Dorset Street, Lr.	New Milk	41% added water	10 0 0	—
Quinn, Edward ...	11 Nicholas Street	Buttermilk	62% do.	0 10 0	—
Quirke, James ...	81 Rialto Cottages	New Milk	18% do.	Defendant absconded	—
Rafter, James ...	34 James's Street	do.	14% do.	1 0 0	—
Russell, Christopher ...	76 Marrowbone Lane	do.	40% fats abstracted	2 0 0	—

Prosecutions under the Food and Drugs Act.

Name	Address	Article Adulterated	Extent of Adulteration	Fines	Costs
				£ s. d.	£ s. d.
Russell, Patrick ...	1 Fairview	Whiskey	35% under proof	0 10 0	—
Redhouse, Henry ...	15 Lr. Tyrone Street	New Milk	16% added water	10 0 0	—
Rafter, Thomas ...	22 Aungier Street	do.	46% fats abstracted	2 0 0	—
Smyth, Robert ...	Santry	do.	7.5% added water	2 0 0	—
Smyth, Rose ...	66 North Circular Road	do.	34% do.	5 0 0	—
Seale, Edwin ...	Moneylawn, Gorey	do.	6.25% do.	0 5 0	—
Thornton, John ...	16 Meath Street	do.	13% do.	1 0 0	—
Tierney, Margaret ...	111 Summerhill	Buttermilk	26% do.	0 5 0	—
Temple, Ellen ...	19 Manor Street	do.	18% do.	5 0 0	—
Tierney, Margaret ...	111 Summerhill		25% do.	5 0 0	—
Waldron, Patrick ...	56 Meath Street	Whiskey	50% under proof	5 0 0	—
Weldon, Honoria ...	79 Capel Street	New Milk	14% added water	1 0 0	—
Wharton, Thomas ...	52 Amiens Street	do.	20% fats abstracted	0 10 0	—
Wade, Thomas ...	30-1 Cornmarket	Butter	Fats foreign to butter	3 0 0	—
Wilson, William ...	26 Townsend Street	New Milk	10% added water, and 23% fats abstracted	0 10 0	—
Woods, William ...	Baskin, Santry	do.	13% added water	1 0 0	—
			Total,	£317 2 0	£2 15 0

Prosecutions for Breaches of Margarine Act.

Name	Address	Offence	Fine	Costs
			£ s. d.	£ s. d.
Connell, Peter ...	99 Lr. Gloucester Street	Unlabelled Margarine	Dismissed	—
Connolly, Wilfred and Co.	38 Lr. Dorset Street	Margarine which contained 60% pure butter	1 0 0	—
Egan, James ...	2 Annesley Place	Unlabelled Margarine	0 10 0	—
Foy, Thomas ...	18 Commons Street.	do. do.	2 0 0	—
Groome, John ...	137 James's Street	do. do.	1 0 0	—
Murphy, William ...	60 Donore Avenue	do. do.	1 0 0	—
Malone, Joseph ...	58 Beresford Street	do. do.	1 0 0	—
			£6 10 0	—

Total Fines and Costs, £325 17s. 0d.

Comparative Summaries for the Years 1871-1908.

Year	Number of Analyses Performed	Quantity of Unsound Food Condemned lbs.	Number of Persons Fined for Selling Adulterated Food, or for breaches of Margarine Act	Number of Persons Fined for Selling, &c., Diseased Meat, &c.	Number of Persons Imprisoned for Selling, &c., Diseased Meat, &c.	Total Convictions	Amount of Penalties Imposed
1871	257	413,151	14	13	5	32	£100 17 7
1872	523	332,961	67	25	2	94	434 5 0
1873	439	224,552	43	11	10	64	311 10 6
1874	405	258,682	37	4	6	47	150 5 0
1875	601	380,679	44	4	—	48	265 0 0
1876	1,001	229,111	68	10	4	82	271 5 2
1877	1,760	110,284	22	2	—	24	101 0 0
1878	1,700	243,084	14	4	—	18	52 11 0
1879	685	215,151	44	—	—	44	127 15 0
1880	758	262,497	65	1	1	67	321 0 0
1881	516	242,425	56	3	—	59	258 0 6
1882	979	187,845	43	—	—	43	194 0 0
1883	718	121,931	48	—	—	48	181 10 0
1884	894	152,572	63	2	—	65	297 0 0
1885	768	220,180	56	—	—	56	280 10 0
1886	428	214,694	43	—	—	43	211 0 0
1887	658	201,569	45	—	—	45	247 0 0
1888	289	78,721	32	3	—	35	187 0 0
1889	545	62,750	64	4	—	68	378 12 0
1890	532	82,669	67	10	—	77	248 16 0
1891	896	112,109	81	4	—	185	608 12 0
1892	839	108,042	138	14	—	152	443 14 0
1893	1,360	102,751	126	6	—	132	505 4 0
1894	1,317	228,415	166	14	—	180	456 13 0
1895	842	78,933	173	6	—	79	106 7 6
1896	1,005	153,159	82	5	—	87	214 15 0
1897	953	110,746	40	2	—	142	69 0 0
1898	1,787	96,571	101	6	—	107	200 14 4
1899	1,856	74,758	173	3	2	78	392 5 7
1900	1,867	75,907	77	6	—	183	167 10 0
1901	2,702	125,456	105	26	—	131	414 11 0
1902	4,695	115,981	91	18	1	10	360 15 8
1903	5,920	208,178	183	14	—	197	329 16 8
1904	3,713	205,167	16	5	—	21	199 10 0
1905	3,154	181,964	70	4	—	74	175 7 0
1906	4,602	164,604	91	4	—	95	146 10 0
1907	5,219	168,540	60	1	—	61	161 10 0
1908	6,901	183,879	117	—	—	132	325 7 0
Totals,	64,343	7,021,725	2,840	257	35	3,147	£10,054 8 6

THE COMPOSITION OF THE VARTRY PIPE WATER, taken from a tap in the City Laboratory, 17 Castle Street, was as follows:—

One Imperial Gallon (70,000 grains) contained:—

Date Sample taken ...	JAN. 2nd	FEB. 1st	MAR. 1st	APRIL 3rd	MAY 1st	JUNE 1st	JULY 1st	AUG. 1st	SEPT. 2nd	OCT. 1st	NOV. 1st	DEC. 2nd
Total solid matters ...	Grains 4·300	Grains 4·200	Grains 4·300	Grains 4·200	Grains 4·200	Grains 4·200	Grains 4·200	Grains 4·200	Grains 4·200	Grains 4·200	Grains 4·200	Grains 4·200
Including—												
Albuminoid Ammonia ...	0·0075	0·0065	0·007	0·0060	0·006	0·007	0·007	0·007	0·007	0·0065	0·0065	0·006
Saline Ammonia ...	trace	trace	trace	trace	trace	trace	trace	trace	trace	trace	trace	trace
Nitrogen in Nitrites and Nitrates	trace	trace	trace	trace	trace	trace	trace	trace	trace	trace	trace	trace
Chlorine	0·890	0·890	0·890	0·890	0·890	0·890	0·890	0·890	0·890	0·890	0·890	0·890
Equal to Chloride of Sodium	1·470	1·470	1·470	1·474	1·474	1·474	1·474	1·474	1·474	1·474	1·474	1·474
Oxygen absorbed from Permanganate of Potassium Solution—												
After 15 mins, at 80° F.	0·094	0·050	0·080	0 048	0·060	0·048	0·049	0·037	0·033	0·094	0·080	0·068
After 4 hours do. ...	0·161	0·100	0·142	0·086	0·090	0·094	0·104	0·101	0·086	0·142	0·128	0·128
Hardness before being boiled	2·2°	2·2°	2·2°	2·2°	2·2°	2·2°	2·2°	2·2°	2·2°	2·2°	2·2°	2·2°
Hardness after being boiled	2·0°	2·0°	2·0°	2·0°	2·0°	2·0°	2·0°	2·0°	2·0°	2·0°	2·0°	2.0°
Microscopical examination	satisfactory	satisfactory	satisfactory	satisfactory	satisfactory	satisfactory	satisfactory	satisfactory	satisfactory	satisfactory	satisfactory	satisfactory
Colour looked at through a tube 2ft. in length ...	light yellow	light yellow	light yellow	light yellow	light yellow	light yellow	light yellow	light yellow	light yellow	light yellow, not quite clear	light yellow not quite clear	light yellow, not quite clear
Suspended particles ...	some minute	some minute	some minute	some minute	some minute	some minute	some minute	some minute	some minute	some minute	some minute	some minute
Sediment	very slight	very slight	very slight	very slight	very slight	very slight	very slight	very slight	very slight	very slight	very slight	very slight

The total solids and chlorine are remarkably constant in quantity throughout the year.